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The Stewart Lectures.

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I.
THE DISTRIBUTION AND SPREAD OF DISEASES IN THE EAST.

I greatly appreciate the honour which has been conferred upon me by the University of Melbourne in inviting me to deliver this year's Stewart Lectures.

I fully realize that my connexion with the Australian Institute of Tropical Medicine in Townsville affords me the enviable opportunity to address such a distinguished gathering.

I sincerely hope that I shall succeed in convincing you in my lectures of the important bearing of the work of the Australian Institute of Tropical Medicine upon the future of Northern Australia, which has been so liberally acknowledged by the Commonwealth Government. The preservation of Tropical Australia can only be accomplished by means of the study and the eradication of tropical diseases present, by the prevention of the introduction of new diseases, and by the study of the influence of climatic and economic conditions upon the white settler in Northern Australia, with a view to eliminating any influences which might lead towards the deterioration of the race.

For the understanding of the distribution of disease in the East, it would seem necessary to deal briefly with the origin of the earliest inhabitants of Malaysia and Oceania.

According to Hutchinson, there does not exist at present a generally accepted theory. It appears probable that the earliest inhabitants were descendants of tribes of an ill-defined Negro type, which gave rise to the Andamanese, the Semangs of Malaysia, the Aeta of the Philippines, and the Pygmies of New Guinea on the one hand, and to the Tasmanians, the Papuans, and the majority of the Melanesians on the other hand.

At a very early age the brachycephalic Mongols, called Proto-Malays by Haddon, mixed with these original inhabitants, after having migrated from the Malay Peninsula to the islands further south, giving rise to the lighter-coloured races in the Pacific.

A second early migration fused with the Proto-Malays, forming the Proto-Polynesians of Haddon, and these migrated into the western Pacific, where, mixing with the early black people, they gave rise to the Melanesians, whilst others passing through or around Melanesia, went on to Tonga and Samoa, and later to Tahiti and Raratonga, of the Cook Islands, spreading later to Hawaii and the Marquesas, and at a still later date to New Zealand.

Earlier migration still, perhaps of lowly-developed Asiatic stock, may have given rise to jungle tribes of India and Ceylon, and perhaps to the Kakhyers of Northern Borneo, to the Sakai of Malaysia, and to one element in the Australian race.

These migrations, or voyages, are supposed to have began by a migration to Java as late as 65 B.C., and did not cease till about 1350 A.D., and to them must be attributed the varied character of the population of most of the Pacific Islands.

Within the last two hundred years very little migration appears to have taken place with the exception of the Malays, who were great fishermen, and made long journeys in their prahus in search of *bêche-de-mer*, visiting lands as far distant as the north coast of Australia.

This lack of communication may explain the fact that many of the diseases in the East are, generally speaking, confined to certain areas. Various epidemic diseases, such as cholera, plague, small-pox, etc., have spread all over the densely-populated eastern countries, but have not been able to gain a firm foothold in the numerous islands of the Pacific.

The different types of malaria occur all through Tropical Malaysia and Oceania, in varying severity. This disease is to be found as far north as the southern parts of Korea, and is very prevalent in Formosa, where the number of deaths from malaria during the years 1906 and 1908 varied between 10% and 11% of the total death-rate.

In Japan the mosquito, *Nyssorhynchus sinensis*, acts, according to Kinoshita, as the carrier of the parasite *Plasmodium vivax*, which causes the benign type of malaria, whilst *Plasmodium falciparum*, the cause of pernicious malaria fever, is transmitted by another species of mosquito, namely, *Anopheles listoni*.

Malaria is found throughout China, and some of the very worst malaria regions are to be found in tropical China, not only along the coast at Hong Kong, Canton, etc., but along the course of the rivers, where fever is just as pernicious as in the coastal districts. A severe form of malaria occurs in the Malay States, the Dutch East Indies, and most of the Pacific Islands.

In New Guinea, malaria seems to be more prevalent in the coastal districts east of Port Moresby than in the western parts, and in this region the percentage of children with enlarged and palpable spleens, a symptom which constitutes the malaria index, is very high indeed, being in many districts as much as 80% of the total number of children examined. In Western New Guinea, in the swampy, muddy parts, malaria seems only prevalent during the season when the prevailing winds are from the north-west, coincident with the presence of numberless mosquitoes, which vanish with the advent of the south-east winds.

In Tropical Australia malaria shows a fairly wide distribution. Cases have been reported from the northern parts of Western Australia and from the

Northern Territory, where, in 1909, 34.10% of the total number of admissions to the Darwin Hospital suffered from fever.

The severest outbreaks of fever occurred in 1909 and 1910, during one of the mining rushes to the Territory, when the Umbrawarra Creek Tin Field was opened up. Numbers of miners had come across from New Guinea, a good many of whom were in a chronic state of pernicious malaria, and as the fever-carrying mosquito, *Nyssorhynchus annulipes*, was abundant, it spread rapidly through the mining camp, causing a number of deaths.

In Northern Queensland, sporadic cases are observed from Cape York Peninsula as far south as Townsville. In some seasons Cairns seems to be a hot-bed of malaria of a virulent character, and spo radic cases have been treated at the Townsville Hospital from the scrub districts between Cairns and Townsville.

The distribution of malaria in Australia corresponds, on the whole, with the incidence of the mosquito, *Nyssorhynchus annulipes*, which acts as the carrier of the parasite. It is curious to note that there are localities where the mosquito has been found, but where malaria is practically non-existent. An explanation of this apparent discrepancy has been put forward by Sir Ronald Ross, the great authority on malaria. According to him, the amount of malaria depends not only upon the number of suitable mosquitoes, but upon the proportion of those which succeed in biting human beings suffering from malaria, in living long enough to mature the parasite within themselves, and in again biting human beings and inoculating them with the parasite. Not long ago it was a commonly accepted idea that the female mosquito (which alone sucks blood, the male being entirely vegetarian) feeds only once, lays her eggs a few days later, and dies. But recent experience has proved that some species of malaria-carrying mosquitoes can be kept alive in captivity for as long as fifty-nine days.

According to Ross, possibly a quarter of the total number of anopheles may succeed in biting human beings once. A third of these may live for a further ten days, of which only a quarter may succeed in biting again. That is, only one out of the forty-eight female mosquitoes can ever have a chance of carrying malaria.

As these figures apply only to the proportion of mosquitoes to each person, the ratio will be much smaller in thinly-inhabited areas. This calculation shows that it requires a great number of suitable mosquitoes, and a number of patients harbouring parasites in their blood, for malaria to become endemic.

Another fever of very wide distribution in the East is Dengue, a fever which gives rise to the most diverse symptoms. The onset is sudden; the body temperature rises without any premonitory symptoms. The patient complains of severe pains in the head, in the lumbar regions, and in the bones; hence the popular name of "break-bone fever."

According to Ashburn and Craig's experiments, the hitherto unknown parasite of dengue fever is transmitted by *Culex fatigans*, the common house mosquito, which is ubiquitous throughout the tropics, and it is due to the enormous prevalence of this particular mosquito that the disease has become so widely spread.

Dengue fever occurs throughout the East, assuming now and again a pandemic character. It has been observed in Formosa, Tropical China, the Philippines, the Dutch East Indies, New Guinea, and has invaded most of the islands of the Eastern Archipelago. According to records, it was introduced into Queensland as recently as 1894, probably much earlier, as I was informed that in 1879 a fever epidemic with hardly any mortality appeared in Townsville. Since then it has swept over the populated parts of Queensland and the northern parts of Western Australia into the Northern Territory. One attack of dengue fever confers only a transient immunity, and, in consequence, every now and again the whole population of the northern towns has to pay its tribute to the unwelcome guest.

The appearance of a dengue fever epidemic is always a serious matter, since it invalides the sufferer completely for about two weeks, and leaves the convalescent patient in a singularly depressed state for weeks afterwards, so that, after a severe dengue epidemic, the number of suicides is always above the average.

Speculations as to the origin of new epidemics are fascinating. Does the dengue fever parasite lie dormant in the mosquito, its intermediary host, for months, and even years, and suddenly become again conscious of its virility when the acquired transient immunity of the populace has passed away, or is always a fresh case of the disease introduced from outside giving rise to the new epidemic. This latter conception is more likely, since one can, as a rule, see the spread starting from one centre, from street to street, and from town to town.

Maita Fever, a far more serious complaint than dengue, has not yet been able to gain a firm foothold in the East. This fever comes on gradually with headaches, bone-aches, and lassitude. The patient is very ill for months, and often slight improvements and relapses follow each other at irregular intervals.

China is the only eastern country where cases of Malta fever have been known; but it is not improbable that in the near future some of the hitherto undescribed fevers will be diagnosed as Malta fever.

Of bacterial diseases, Plague and Cholera are more or less endemic in the East. The symptoms of plague are so characteristic that it cannot be mistaken for any other disease. It may appear in the form of pneumonic or bubonic plague, the former resembling, clinically, a very acute form of pneumonia, when with a sudden rise in temperature lung symptoms develop, and in the majority of cases death takes place in from 36 hours to three days. In the case of bubonic plague the lymph glands swell up suddenly, accompanied by a general feeling of severe malaise.

Plague is widely distributed in the East, being endemic in the southern parts of Japan, and in China, in the Malay Peninsula, and Java.

Within the last two years a fatal pandemic of

pneumonic plague swept over Manchuria, causing a great mortality.

Now and again it invades the Philippine Islands, and even Australia has been visited more than once by more or less severe outbreaks of this much-dreaded disease.

In India, plague has been rampant for a long time, and it is quite a common occurrence to find 500 to 600 deaths recorded in the course of one month.

Plague is propagated by means of infected rats, and the bacilli are transmitted to a human being by the bite of the rat fleas. According to the conclusions of the Indian Commission, the spread of plague is not so much due to the migration of rats as to the presence of infected rats on ships, and the introduction of infected fleas in merchandise. We have, therefore, in plague, a disease which might, at anytime, be introduced again into Australia.

Cholera, an epidemic disease, characterized by violent gastro-intestinal symptoms and collapse, has, in all probability, originated in the East. Symptoms corresponding to this disease have been described in the most ancient Indian literature, and it was recorded in Java as far back as 1629. After an epidemic in Calcutta, which lasted till 1823, cholera began to spread eastwards to Malacca, Penang, Singapore, and Manila. In 1832-33 a pandemic appeared in Europe, United States, Cuba, and even Australia became infected, and in 1906 another severe outbreak occurred in Japan, China, and the Philippine Islands. At present, cholera is endemic in Japan, China, Malay Peninsula, Borneo, Celebes, and Java, places which are in close proximity to, and in constant communication with, the northern parts of Australia.

The possibilities of the introduction of this scourge into Australia are thus very great, and its advent can only be prevented by the strictest quarantine regulations.

Dysentery, a disease of world-wide distribution, is commonly observed in the East. The two forms, the amœbic and bacillary dysentery, the former caused by a protozoan, the latter by a number of biologically closely allied bacteria, occur endemically throughout Japan, China, the Philippine Islands, and the Dutch East Indies. Bacillary dysentery has made its appearance in New Guinea within the last two decades, and has been responsible for a great number of deaths amongst the natives. It has been spread by dysentery carriers—natives who have apparently recovered from the disease, but harbour numberless fully-virulent bacteria in their intestines. Indentured labourers who have survived an attack of dysentery, carry the infection to their village, thus causing, on their return, an outbreak of the epidemic. It is certainly the most important disease in New Guinea from an economic point of view.

In Northern Australia, dysentery is a comparatively rare complaint. On more than one occasion, however, it has been introduced into Thursday Island by labourers recruited from New Guinea.

Another intestinal complaint peculiar to the East, and of uncertain ætiology, is Sprue (tropical aphthæ), of which disease a catarrhal inflammation of the mucous membrane of the intestinal tract is the main symptom, giving rise to chronic diarrhœa. The motions are large, of greyish colour and frothy, the patient emaciates, the skin becomes dry and dark, so that the complexion of an advanced case is of an ochre colour.

Cases are found in Japan, in China, in the Philippines, Malaya, Sumatra, Java, New Caledonia, and the Fiji Islands. In Australia, the occurrence of sprue is confined to the coastal belt between Mackay and Cairns, most of the cases originating in Bowen, Ingham, and Innisfail districts. No cases, or even record of cases, have been obtained from New Guinea.

Leprosy is a common complaint throughout all tropical countries, and has not spared the East. In Japan and China leprosy is extremely prevalent, and from olden times the disease has been rampant in these countries.

Cases are seen more or less frequently in the Philippines, Dutch East Indies, and especially in New Caledonia, where it has been introduced within the last fifty years. In New Guinea lepers are met with in small numbers along the coastal districts. A number of cases were diagnosed in the Mekeo district, west of Port Moresby, and on Trobriand Island, situated off the north-east coast. On the other hand, districts west of the Vailala River, where the oil-fields are situated, seem singularly free from the disease.

Leprosy is fortunately comparatively rare in Australia. Amongst the aboriginals in the far north lepers are found in small numbers, whilst now and again a case is discovered in a white man.

In New Zealand, in the olden times, leprosy was widely distributed, and was known under the native name "Ngerengere."

Of complaints which are most probably of purely Eastern origin, and have spread far and wide, Beri-Beri is perhaps of the greatest economic importance.

According to Scheube, references to this disease, under the name of "Kake," occur in Chinese literature of 200 B.C., and these manuscripts contain unmistakable descriptions of beri-beri. In a Chinese book, written about the tenth century, the dry and wet forms of beri-beri are already differentiated, and descriptions of this disease also occur in Japanese medical literature of the ninth century. Without a doubt, however, other complaints causing dropsical conditions of the legs have been confused with true beri-beri.

The most pronounced pathological lesion of beriberi is a degeneration of different nerves of the body, mainly of the nerves of the legs and the heart. It may exhibit two clinical aspects, which are differentiated into the so-called wet and dry type.

Beri-beri occupies a large and anxious share of Eastern diseases. It is prevalent in Japan, Indo-China, and China. Frequent cases occur in the Philippines, in the Malay States, and in Dutch East Indies. A number of cases have been observed among the native labourers in New Guinea, whilst numerous

cases originated among the coloured crews of the pearling boats in Thursday Island, filling the hospital at certain seasons of the year to its utmost capacity. A small epidemic is said to have occurred in Western Australia, and a few cases have been described from Western Queensland, whilst quite recently this disease has appeared in some of the Pacific Islands, especially Fiji and New Caledonia.

In spite of the large amount of work done on the ætiology of this disease, it is still, to a certain extent, shrouded in mystery. It is a generally accepted opinion that the disease is due to deficient diet, to the exclusive use of highly-polished rice; in other words, rice of which the husk has been completely removed. It is very probable, however, that even at present several different, but closely-allied, diseases are classed under "beri-beri."

Another disease of very wide distribution in the eastern tropics is Yaws, or *Framboesia tropica*. Yaws is purely a tropical disease, closely resembling syphilis in its clinical manifestations. It is accompanied by an eruption, which may attack any part of the body, and is most frequently found on the hands and soles of the feet.

Yaws is very common in India, the Malay Peninsula, in Siam, Java, and in the Philippine Islands, and throughout the Pacific Islands. In Fiji, every child is said to contract the disease in infancy. In China, cases of yaws are only rarely encountered, and then mostly in coolies returning from the Straits Settlements.

A mild form of yaws prevails in the Torres Straits Islands, where nearly every child examined had some sign of a past or present attack.

It also occurs amongst the aboriginals of the Northern Territory, and, during my visit there, I was informed that many of the aboriginal children were infected.

In New Guinea, as far as visited, the disease is rampant. A large percentage of the children in the coastal villages suffer from yaws in the different stages, and many of the adults have the curious scar formation around the mouth, the result of a past infection. Europeans, on the whole, do not contract yaws, as this disease is only propagated by contact.

The distribution of *Filariasis* and *Elephantiasis* in the East is of special interest.

Filariasis is a disease caused by the presence of a nematode worm, *Filaria bancrofti*, about four inches in length, in the lymphatic system of human beings, giving rise to the most varied clinical symptoms, lymphangitis, abscess formation in different parts of the body, chyluria, and last, but not least, elephantiasis, an enormous swelling of the infected parts.

The worm larvæ live in the blood of the patient, and are, curious to say, in many cases, only to be found in the peripheral blood at night time. In the day time they live mostly in the lungs and in the larger vessels. The larvæ are very small, only about one-eightieth of an inch in length, and are surrounded by a sheath, in the interior of which they may be seen moving backwards and forwards.

Filariasis is a typical mosquito-borne disease. The filaria larvæ are taken up with the blood by a certain species of mosquito, in which they undergo a further development before being able to cause infection. From the stomach of the mosquito the developing larvæ emigrate to the labium, a part of the proboscis of the insect, and there they await an opportunity, when the mosquito bites again, to enter the blood stream of man, where they develop in the course of about a year into mature adult worms.

In Japan, filariasis and elephantiasis are known to occur, but it is only the most southern part of the great island which is affected by the disease. Throughout China, filariasis is common, and it was in China, where Sir Patrick Manson made his discoveries on the life history of the parasite.

Filariasis is common in the Philippine Islands, in Guam, it is present in the Malay Settlements, in the Dutch East Indies, New Guinea, Queensland, and the Northern Territory, and it is very widely distributed in most of the Pacific Islands.

It is probable that all the filariæ of the different eastern countries belong to one and the same species, although attention has been drawn lately to the fact that the typical nightly presence and daily absence of the parasites from the peripheral blood is not common to all the larvæ, but in some cases they are to be found whenever sought, day or night.

The Chinese microfilaria is a nocturnal filaria (from this peculiarity hails the name *Microfilaria nocturna*). The Philippine microfilaria, as well as the microfilaria in the blood of some of the New Guinea natives, is of the non-periodical type. The nocturnal filaria, however, was found to exist in New Guinea as well.

In some of the Pacific Islands, as, for example, Fiji, the non-periodical filaria exists, and, according to Bahr's observations, *Stegomyia pseudoscutellaris* acts as intermediary host. This same species of mosquito is prevalent in Eastern New Guinea, and it is possible that the distribution of the non-periodical filaria may be coincident with the presence or absence of this species of mosquito.

In Queensland, the microfilaria show, without exception, the typical periodicity.

Filariasis is very irregularly distributed in Queensland. The disease is more prevalent in Brisbane and Port Douglas than in Townsville. In Brisbane, nearly 17% of the total admissions to the hospital show the parasite in their blood; in Townsville, however, only 3.4%.

Elephantiasis occurs in all regions where filariasis is common. More than once cases were seen in New Guinea, in which the extent of the swelling was as well marked as in any of the famous text-book pictures.

Of diseases which are more or less confined only to parts of the East, Gangosa offers some interest. Gangosa, or "Rhinopharyngitis mutilans," is an ulcerative condition of the nose, palate, and throat, which begins, as a rule, as a thick, œdematous swelling on the upper lip, and spreads into the nasal cavity, to the pharynx, and often to the skin of the

face and neck, destroying the greater part of the face, and giving rise to a most hideous appearance.

Cases of gangosa were first described as occurring in the Ladrone Islands, Caroline Islands, Guam, and later in the Philippines. It is endemic in British New Guinea, and numbers of cases have been observed in the coastal districts between the Fly River and Samarai. It has been found in the Torres Strait Islands, is most common in Murray Island, where it was referred to as far back as 1822 by Dr. Wilson in his narrative of a "Voyage Round the World."

Another typical Eastern disease of limited distribution is the "Juxta-articular nodules." In the legs and arms, as a rule in proximity to the joints, nodules are found in the sub-cutaneous tissue of varying sizes—sometimes as large as hens' eggs, sometimes quite small and of hard consistency. Sir William MacGregor, when Governor of New Guinea, pointed out that the nodules occur mostly on parts which come in contact with the ground when the native is resting. The frequency of their occurrence in some of the villages, their total absence in others, however, supports the opinion of a parasitic origin, which has been confirmed lately by the discovery of a fungus in the nodules.

Of Helminthic infection, *Agchylostomiasis* is perhaps of the greatest importance from an economic standpoint. In the tropical parts of China, the Philippines, throughout the Dutch East Indies, in British New Guinea, and in Northern Queensland, hookworm is a frequent and unwelcome guest.

Agchylostomiasis may be caused by two morphologically, but closely-allied, nematode worms—*Agchylostoma duodenale* and *Necator americanus*—both of which give rise to similar clinical symptoms, namely, a profound anæmia.

The first species, *Agchylostoma duodenale*, is found in China; the second species, the American hookworm, is the more common in the Philippine Islands and in New Guinea, whilst both species are frequently encountered in Queensland.

A brief survey of the life history of the hookworm, which is appropriately known by the lay community under the name of bloodsucker, will demonstrate the important bearing of its presence and the danger of its further spread.

The adult female worm lives in the small intestine, and an enormous number of eggs is passed in the motions. In a hot and humid atmosphere these eggs begin to develop, and after a short interval a small embryonic worm appears. The larva leaves the egg, and grows to about one-fortieth of an inch, and moves into moist soil, or, if possible, into water, and may live there for several months.

This mature larva is awaiting now an opportunity to infect. When it comes into contact with human skin it bores its way through, enters the circulation, and passes by way of the heart into the lungs, and wanders through the trachea and œsophagus into the intestine, where the adult worm develops.

As an enormous number of eggs is passed by each infected individual, and as the sanitary conditions in the scrub leave much to be desired, it can well be imagined that in suitable localities the infection is already well established, and that unless stringent measures be taken, a further spread must be expected.

It is very curious that agchylostomiasis has not been found in the Australian mines, as it is well known that the damp heat in mines is especially favourable for the development of the parasite. Experiences in other countries, such as England, Belgium, and Germany, have shown what serious consequences might arise from the employment of a few infected individuals in a suitable mine.

From this short survey of tropical diseases which occur in the Eastern countries, it becomes apparent that there exists a continuity in the distribution of a great many of the diseases mentioned, from China, through the Malay Peninsula and the East Indies, as far as New Guinea and tropical Australia.

Tropical Australia, on account of its insular isolation and its scanty population, has enjoyed, up to now, a freedom from the inroad of many of these diseases, although quite a number of them, such as filariasis, sprue, malaria, dengue fever, yaws, and agchylostomiasis have invaded Northern Australia, and have found the conditions favourable.

Modern times, with their improved ways and means of communication, have shortened the distance between Australia and the surrounding lands, and thus have brought new and important problems before the far-seeing sanitarian.

The modern aspect of hygiene is chiefly concerned with the study of local and general conditions, which may favour the spread of disease in case it should be introduced, and at the same time with the framing and putting into practice of such quarantine regulations as will prevent their introduction.

A practical example may give a clear idea of this conception. We are now on the eve of the opening of the Panama Canal. Ships coming from zones where yellow fever is endemic can travel without leaving tropical waters to China, India, and Australia.

Stegomyia fasciata, the yellow fever carrying mosquito, has a very long life. Female mosquitoes have been kept alive in captivity in Townsville for five months, being fed twice weekly; and it is also an expert traveller, having proved its qualities by crossing from Central America to Spain and Portugal, causing outbreaks of yellow fever on shipboard, and even in Europe.

In Europe an epidemic could not spread, since stegomyia cannot live on account of the low temperature. It is quite a different matter in the East and in Northern Australia, where stegomyia is very common. It occurs very frequently in Darwin, and as far south as Brisbane, and a few have been found in Newcastle. The temperature in Northern Australia, especially during the summer months, is high enough to enable the yellow fever parasite successfully to undergo its development in the mosquito. Suppose, as an instance, that infected stegomyia were introduced into North Queensland, and were able to infect one person. The diagnosis of

yellow fever during the first three days is very difficult, even to the experienced, and it is during this time that the blood of the patient is infectious to the mosquito. Numbers of stegomyia, which occur abundantly in Queensland, would have an opportunity to take up the virus, and, after twelve days, the time required for the complete development of the parasite in the mosquito, more cases of an indefinite but fatal fever would crop up, and yellow fever would soon become established.

Let us now consider the steps which may be taken to prevent such a terrible scourge as yellow fever from entering Australia. It is practically impossible to fumigate ships so thoroughly as to feel assured that all the mosquitoes have been destroyed. As an example of this, I may quote an instance which came under my own observation whilst living in South America, in a zone heavily infected with yellow fever. Several cases of yellow fever had occurred on one of the steamers, and the port authorities had undertaken the fumigation of the whole vessel. Just before the cabins were closed up, I was able to hide a wire cage containing live mosquitoes under a sheet in one of the cabins. Hours afterwards, when the ship was supposed to have been thoroughly fumigated, I inquired into the welfare of my mosquitoes, and, not altogether to my surprise, I found that the majority of the mosquitoes had passed through the ordeal unharmed.

As the fumigation of ships cannot be depended upon, there is only one course open, and that is a thorough and energetic campaign against the mosquito throughout tropical Australia.

During the yellow fever outbreak in New Orleans, the Americans have proved that a town can be made practically mosquito free within a few weeks.

I have gone into this question of yellow fever in some detail, because it supplies so excellent an example of the permanent danger by which we are faced.

But yellow fever is by no means the only danger to which Australia is exposed. Many diseases, grim and terrible in their manifestations, are to be found in countries which are within easy reach and in constant communication with Northern Australia. All the conditions which some of these diseases require in order to propagate when once they are introduced, such as climate and suitable insect hosts, are present, with one exception, that of a dense population. Besides human diseases, there are many deadly diseases in stock, which occur in the near neighbourhood of Australia, and which might be introduced any time, in spite of the most thorough quarantine regulations. I refer to diseases like surra, a blood disease of horses occurring in the Philippines and India; rinderpest, and many others which would cause as much havoc and mortality as did the introduction of redwater fever, which came from the East.

Only a careful study of the conditions which favour the spread of disease, their removal if possible, and at the same time a strict and discreet quarantine service, will enable us to preserve tropical Australia from the inroad of these diseases, which might stunt its development for years to come.

SOME OBSERVATIONS ON THE DIAGNOSIS AND SURGICAL TREATMENT OF PYURIA.[1]

By **S. Harry Harris, M.D.,**

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Part I.

Although it is a well-established fact that bacteria may appear in the urine without any demonstrable lesion in the urinary tract, nevertheless, modern methods of investigation have conclusively shown that their presence in the urine is, with a few exceptions, always indicative of some pathological condition, most frequently in the urinary tract, less commonly in the alimentary tract, and occasionally elsewhere. Koll, of Chicago, has well said in a recent review (*Surg., Gyn. and Obst.*, April, 1915, p. 352): "It must be remembered that the normal urine is sterile. . . . The presence of bacteria is a note of warning, a danger-signal, as it were, of some pathological change. . . . It is true that bacteria are often saprophytic in the urethra and prostate, but never in the kidney or bladder. We must conclude, therefore, that unless it is definitely shown that bacteria in urine originate in the urethra or prostate, and that here, in the absence of pus, bacteriuria as a clinical entity is a misnomer."

The presence of pyuria in addition to bacilluria, while not pathognomonic of primary urinary tract disease, is at least a definite indication of urinary tract involvement.

The determination of the actual site of the primary lesion is frequently a matter of no little difficulty, as the symptoms are sometimes misleading, and may be almost non-existent at the time of examination. Care and attention to detail will generally enable an accurate diagnosis to be made, at any rate of the site of the disease, if not always actually of its exact nature. To this end collaboration may be required between the physician, the radiographer, the cystoscopist and the pathologist.

I believe it is a fact which is not sufficiently recognized that, with the exception of renal tuberculosis and of gonorrhœa, bacterial infection of the urinary tract in adults is comparatively infrequent as a primary disease. The infection is in most cases secondary to a urinary stasis dependent on some obstructive lesion, such as calculus, stricture of ureter —whether intrinsic or extrinsic—enlargement of the prostate, stricture of the urethra and the like.

Many of these cases, to their detriment, are labelled with the diagnosis of *b. coli* infection, staphylococcus infection and so on, the fundamental lesion being overlooked, perhaps because the early symptoms are not sufficiently urgent. Vaccines, bladder irrigations, antiseptics and alkalies are sometimes persevered with for weeks and months, without improvement, and often no definite diagnosis has been made, the while the local condition too often makes insidious progress. I believe one can state in all fairness that the discovery of pus in the urine is too often taken as a signal for the institution of vaccine therapy and bladder washing. This method of treatment, in the absence of an accurate diag-

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on May 28, 1915.

nosis, savours much of empiricism, and, save in exceptional circumstances, can surely have no *raison d'être.*

As experience increases in the investigation and treatment of these cases, the conclusion becomes more and more inevitable that bacterial infection of the urinary tract is rarely a disease entity of itself, but in the great majority of cases merely a symptom of disease.

In the vast majority of these cases, the outward and visible expression of urinary infection is pyuria. In the absence of positive X-ray evidence, which is exceptional, the source of the pus can rarely be definitely ascertained without the use of cystoscopy and its appurtenances. Reliance on physical signs alone, notwithstanding the many differential diagnostic tables to be found in the text-books, will too often lead to faulty diagnosis, with its consequent errors or omissions in treatment. I think it is Leonard Williams who so aptly said in another connexion, "Too much reliance is placed on the facile the instruments of precision are apt to be overlooked."

Doubtless, many of us, to our sorrow, can recall such mistakes which have been revealed to us by the lapse of time, or perchance in the course of further investigation.

Perhaps the chronic suppurative lesions of the kidney have caused the greatest difficulty. The symptoms in these cases are not infrequently entirely referred to the bladder, and the pain and frequency of micturition are especially liable to mislead. In such cases, examination of the bladder may show the absence of any visible involvement, or signs of an accompanying cystitis may be found, especially a trigonitis.

Pyuria, on the other hand, may be the sole outstanding feature.

From a practical point of view, it is important to remember that, at the onset of acute kidney infections, there may be no pus found in the urine, even on careful microscopic examination.

Further, one must bear in mind the variations in pus-output of a kidney, the pelvis or ureter of which is the seat of obstruction, whether this be due to stone, tuberculosis, pregnancy or other cause.

In cases of incomplete obstruction due to stone, it will almost invariably be possible to find a few pus and blood cells in the bladder urine, though exceptionally and in aseptic cases, no abnormal elements may be found.

In cases of complete obstruction, and also in cases of closed renal tuberculosis and of circumscribed abscess formation, where there is a cavity in the kidney, entirely shut off from the renal pelvis, urinalysis of the bladder urine may be quite inconclusive, even though the kidney may have reached an advanced stage of destruction.

The finding of pus-cells in considerable amount in a sterile urine is always extremely suggestive of renal tuberculosis.

Failure to recall the foregoing facts, well-recognized though they be, may lead to some operative interference on an organ, which is not at all at fault. I have knowledge of six recent cases, in five of which appendicectomy, and in the remaining one some pelvic operation had been performed without relief. In each a ureteral calculus was found at a later date to be the *fons et origo mali.*

Per contra, pus-cells, and even blood, may appear in the urine in quite definite amount in cases of appendicitis, and other conditions having their origin altogether outside the urinary tract (*vide* Case V., Part II.).

The amount and character of the pus found in the urine in any particular lesion affords no indication of its source. As Howard Kelly points out (*Diseases of Kidney, Ureter and Bladder*, 1914, p. 216, Vol. I.), "Neither the nature of the infection nor the location can be determined by the kind or proportion of pus-cells or by the condition of the cells. The other cell elements which accompany the pus are also of doubtful value; the blood and epithelial cells associated with the pus have nothing distinctive to indicate any one particular source in the urinary tract. The many claims of ability to determine whether an epithelial cell comes from the bladder or from the pelvis of the kidney by its microscopic appearance cannot be substantiated in practice. The presence of pus casts in the urine is an exceptional finding, and points to pyelonephritis."

It would serve no useful purpose to consider details of urinary diagnosis, which may be found in any modern text-book of urology, further than to record a few interesting cases, illustrative of some of the methods at our disposal, and to make brief reference to the value of the indigo-carmine test as a method of estimation of renal function.

The Indigo-Carmine Test of Renal Function.

There are several valuable methods of estimating approximately the degree of efficiency of the renal function. Of these, the most useful are the indigo-carmine, the phenolsulphonephthalein, the phloridzin and the polyuria tests, and the estimation of urea excretion.

In some cases more than one test may be employed with advantage.

My own preference is for the first and last named, though generally the indigo-carmine alone will suffice.

It must be understood that none of these tests alone is absolute, and care is required that in their interpretation due regard be paid to certain well-defined fallacies. Howard Kelly (*Diseases of Kidney, Ureter and Bladder*, 1914, Vol. I., p. 333) writes: "The dye tests are of immense value in studying improvements in all types of kidneys with impaired function. While, therefore, our tests do not enable us to judge perfectly in any one case, they do afford an enormous assistance. They are just like all other clinical tests in helping to complete the picture necessary for prognosis and diagnosis."

In my experience, the easiest to perform and interpret, and also the most generally uniform and accurate in its results is the indigo-carmine test, and I do not think that its importance in the major surgery of the urinary organs can be too strongly emphasized.

The technique of its performance is extremely simple. Four cubic centimetres of a 4% stock solution of indigo-carmine are boiled in a sterile test-tube, and an equal amount of sterile water added to it. The resulting 8 c.cm. of 2% solution are then injected intramuscularly, preferably in the loin.

If the renal function is normal, a dark blue urine (*vide* Fig. 1*a*) should appear in the bladder within 4 to 20 minutes. A delay beyond these limits, or the appearance of merely a bluish or greenish tint (*vide* Fig. 1*c* and 1*d*), indicates functional derangement.

If the total renal capacity alone is sought, it will suffice for the patient to urinate every minute or two into a glass or white enamel receptacle, failing which a catheter may be kept in the bladder for the duration of the test.

Where more definite knowledge of the functional capacity of each kidney is required, and this will generally be the case apart from prostatic surgery, a cystoscopic examination and observation of the ureteral orifices (chromocystoscopy) will be necessary, or the test may be performed in conjunction with ureteral catheterization, when the specimens from each kidney can be collected and compared. This last method necessarily affords the most complete information, and makes possible, *inter alia*, the accurate determination of the urea excretion from each kidney.

The indigo-carmine injected is quite non-toxic, and even in very large doses has no harmful effects.

The employment of some such safeguard before nephrotomy, nephrectomy and prostatectomy has, as their records show, very largely reduced the percentage of post-operative uræmia in many urologic clinics.

In an experience covering upwards of 100 applications of this test (either alone or in combination with others), and extending over the past 4½ years, I have found it to be uniformly safe and simple, and entirely satisfactory.

Surgical Technique.

Under this heading, I propose to consider briefly (*a*) the operation for removal of calculi from the pelvic segment of the ureter, (*b*) the cystoscopic removal of ureteral calculi, (*c*) the value of anoci-association (Crile) in the operation of prostatectomy.

In view of the special interest attaching to the cystoscopic removal of calculi, it has been found advisable to deal with (*a*) and (*c*) first, and to reserve (*b*) in addition to some interesting cases for treatment in Part II. of this article.

(*a*) Operative Removal of Calculi in the Lower Segment of the Ureter.

On the discovery of a stone in the lower segment of the ureter, it will be necessary to decide at once between non-interference and cystoscopic and open surgical treatment. If the stone be small and symptoms of recent origin and not particularly urgent, a waiting policy is adopted by universal consent. Should the stone show no sign of passing within a reasonable time, or in any case if there is marked infection, even should no further painful attacks occur, it is the part of wisdom to effect its removal. If it is allowed to remain it will generally increase in size and not uncommonly ulcerate its way into the wall of the ureter, with resulting ureteral stricture. In its early stages particularly, removal can frequently be effected by cystoscopic means, and occasionally even later, when perhaps stricture has formed close up to the bladder (*vide* Case I, Part II.). Failing this, or in any case where the stone is large, open operation will generally become necessary, sooner or later, for the patient's well-being.

The Operation for Stone in the Pelvic Segment of the Ureter.

This operation has been generally considered one of the most difficult in urinary surgery. Operation by the old, oblique incision must surely have tried many a surgeon's patience to the uttermost. Comparatively recently the mode of attack has been changed by the adoption of the suprapubic extraperitoneal route. This was, I believe, first advocated in the literature by Judd, of the Mayo Clinic (*Annals of Surgery*, 1914, Vol. LIX.), who described a vertical mesial incision. The method I wish to bring before you differs radically from that described by Judd only in the method of approach, which is by transverse suprapubic incision. It is merely an adaptation to the surgery of the lower ureter of a method of approach to the bladder, which was warmly advocated by Howard Kelly some three years ago in an article in *Surgery, Gynaecology and Obstetrics*, and now described in his book on "Diseases of the Kidney, Ureter and Bladder," pp. 538, *et seq.*, Vol. II. He acknowledged it as a modification of the original operation of Trendelenburg, published in 1890.

For operations on the last two or three inches of the ureter, it affords a more direct method of approach, and in the event of failure of primary union, though this should be exceptional by whatever incision, will afford a more resistant abdominal wall. I have performed this operation on six occasions, and Judd's operation twice, and can recommend the former for its greater simplicity for stones in this position. The steps are as follows (Fig. 1): A curved, transverse incision through the skin, fat and aponeurosis, about one inch above the pubes. Separation of the aponeurosis over the *recti* upwards for three or four inches, by blunt dissection over the muscles, by snipping with scissors or knife at the *linea alba*. The *recti* are then pulled apart vertically. This gives a very wide exposure of the suprapubic space. It is then easy to separate the peritoneum and bladder from the side wall of the pelvis by blunt dissection. Working towards the base of the bladder, the region of the ureter is soon exposed in the depth of the incision, and frequently the *vas deferens* is seen coursing over the region of the ureter in the male, in much the same relationship as the uterine artery bears to the ureter in the female, only slightly further forward. There is remarkably little bleeding. The exposure of the ureter itself is not such an easy matter, as it adheres to the peritoneum and is liable to be pushed inwards out of sight. The presence of a stone, however, facilitates the operation considerably. The ureter is then brought into the field of operation, and the stone extracted. It is unnecessary, and I think inadvisable, to suture

the incision in the ureter. A fold of dental rubber dam is placed in position near the ureter incision and the wound firmly closed with sutures. The drain may be brought out in the middle line, or preferably through a lateral stab incision on the side of the exposed ureter.

Healing was by primary union in all but one of my cases, where slight wound infection occurred. In this case there was marked urinary infection before operation, but the wound was soundly sealed in fourteen days. In no case was there more than a suspicion of urinary leakage, and that only from the first to the third day, when the drain was removed. Two of the patients, each of whom had a small stone embedded in the wall of the ureter, close to the bladder, developed signs of ureteral obstruction at a later date, which was relieved by ureteral dilatation through the cystoscope. It would seem to be a wise precaution to pass a large-sized ureteral catheter in these cases prior to the discharge of the patients from hospital, and to direct them to return for treatment at the first sign of further obstruction.

(c) The Value of Anoci-Association in Prostatectomy.

Time permits mention only of the barest details. Anoci-association was introduced to the profession by Crile, of Cleveland, U.S.A. Operation under these conditions is performed with combined local and very light general anæsthesia, preceded by the hypodermic injection of morphine and hyoscine. With this technique it is claimed that shock during operation, apart from hæmorrhage, is practically abolished.

The technique in suprapubic prostatectomy is as follows: After the preliminary injection of morphine and hyoscine, the bladder is washed out, and 2 oz. of a 5% alypin solution introduced. Light, open ether or gas and oxygen anæsthesia is then induced. Local infiltration of the operative field is then carefully proceeded with, as though no general anæsthetic were being given. Skin, fat, aponeurosis, muscles and bladder wall are successively infiltrated and incised. The prostate is then exposed, and its capsule thoroughly injected with the solution (Figs. 3 and 4), and the enucleation completed.

A solution of 1 in 400 novocaine is used for the infiltrations, to which may be added with advantage potassium sulphate (0.4%) and 12 drops of synthetic adrenalin to each 100 c.cm (Gray; *British Medical Journal*, August 22, 1914, p. 351). The action of the novocaine is thus intensified and prolonged for several hours.

With this technique I have, to date, performed 12 prostatectomies. The results in this series of cases, few though they be, quite bear out all that the authors claim for the method, *viz.*, absence of shock and post-operative pain. I bring the subject before you in the hope that others may be induced to give it a trial. Those interested in the subject will find Crile and Lower's recent work on "Anoci-Association" well worthy of perusal.

Reviews.

TUBERCULIN.

As a contribution to the vexed question of the worth of tuberculin in the treatment of pulmonary tuberculosis, the work of Dr. Hilda Clark[1] is of distinct value. "It is offered to those who are still able to devote themselves to the campaign against disease in the home, in the hope that an accurate record of observations, although incomplete in certain respects, may prove of value." The authoress records the results obtained at the Tuberculin Dispensary, in Street, Somerset, and at the similar institution at Portsmouth. The work is divided into three sections, the first dealing with the general description of the scheme and the methods employed, the second with a description of the cases and the environment, and the third with an analysis and discussion of cases treated with tuberculin.

As a result of her experiences, the authoress comes to the conclusion that tuberculin is a remedy which has proved itself to be of definite use in tuberculosis, but she is careful to admit that the success attained has not been as great as possibly may be attained in the future, with more experience of methods and doses in individual cases. The institutions referred to in this book have adopted the practice of making free use of tuberculin, and of pushing it with boldness. The inference is drawn that this remedy does good in so many instances that, where good results are not obtained, there is reason to blame the method of handling it. The authoress is convinced that, within certain limits of administration, tuberculin is not likely to do harm. The authoress says that, while it may be open to question whether some cases have been injured by tuberculin, there is nothing at present to justify the absolute statement that such injury could have been avoided by greater skill in handling the remedy, or better judgement as to when to use it.

Although this book has been written by one who has become convinced of the value of tuberculin, and the benefits to be obtained by dispensary treatment, there is, throughout, a most sane and scientific tone in dealing with the subject—a contrast to the bitter partisan spirit which has been so often displayed by the advocates of tuberculin treatment on the one hand, and the advocates of the sanatorium treatment on the other. The authoress has succeeded in putting all the evidence she has acquired before the reader in such a clear and convincing manner that we are bound to characterize her work as one of the best we have read for a long time.

VARIOLA IN NEW SOUTH WALES.

Dr. Robertson, the Chief Quarantine Officer for Victoria, has been entrusted with the task of issuing an official report of the New South Wales small-pox epidemic, and the result of his researches and deductions have taken the form of the fourth volume of the Quarantine Service Publications. These volumes, characterized by their yellow covers, promise to grow into a highly valuable library. We have commented favourably on Number 3, The History of Small-pox in Australia, 1788-1908, written by Dr. Cumpston, the Director of Quarantine (see *The Medical Journal of Australia*, February 6, 1915, p. 125).

The present volume[2] is more than a mere historical survey of the 1913-1915 epidemic of New South Wales, for in its pages will be found a careful analysis of the nature of the disease and an accurate comparison with other forms of variola. In this respect, it is a study of what may be termed abnormal types of small-pox, and its future uses as a guide in the determination of the nature of a variolous disease is assured.

The description of the disease published in the belated Annual Report of the Director-General of Public Health of New South Wales (1913), received very valuable support from the quite authoritative expression of opinions at a discussion held at the Royal Society of Medicine in London, and sufficed in this way to establish the identity of the disease epidemic from May, 1913, to the present time, as small-pox. But the account by itself failed in some respects to carry conviction, and was too overweighted to serve the purpose of a permanent official record. Dr. Robertson has been happier in his presentation of the subject. His

[1] The Dispensary Treatment of Pulmonary Tuberculosis, by Hilda Clark, M.B., B.S. (Lond.), late Honorary Medical Officer, Street Tuberculin Dispensary, and Tuberculosis Medical Officer to the County Borough of Portsmouth, 1915. London: Baillière, Tindall & Cox; Royal 8vo., pp. 275. Price, 15s.

[2] Small-pox Epidemic in New South Wales, 1913, by D. G. Robertson, M.D., D.P.H., Chief Quarantine Officer for Victoria, Quarantine Service; Service Publication, No. 4, 1915. Issued under the Authority of the Minister for Trade and Customs; Albert J. Mullett, Government Printer, Melbourne; Royal 8vo., pp. 29; illustrated.

account embraces the first seven months of the epidemic, that is, up to the end of January, 1914, although the preface by Dr. Cumpston is dated November 19, 1914, and the volume has been issued in May of 1915. It is a pity that the publication was not delayed a little, and the records completed up to the end of the epidemic.

In the first chapter, the author traces the history of the North American type of variola, variously known as amaas, giant chicken-pox and Cuban itch. In a table, he compares the incubation, effects of vaccination, date of eruption, distribution of the rash, evolution of the pock, fever, race and age of those affected, and initial symptoms of amaas, natural small-pox, infectious disease in lascars and varioloid varicella. This table is a more forcible proof of the identity of the New South Wales epidemic and variola than many pages of laboured argument. The deductions drawn are that the disease among the lascars was not of the same nature as the other three; that the varioloid varicella of Jamaica resembled the other forms closely, but differed in the scant protection afforded by vaccination and by an antecedent attack of true small-pox, and that varioloid varicella, amaas and the mild disease of North America and New South Wales were one and the same disease.

The analysis of the cases, both from an epidemiological and a clinical point of view, is presented under many cross headings, with the minimum amount of letterpress. This brevity is most commendable, and lends additionable value to the volume. The whole account is compressed into fifteen pages, and is supplemented by two short appendices, three fever charts and an excellent series of photographs illustrating the diagnosis and differential diagnosis.

The warning note struck by Dr. Cumpston in his preface that the true nature of the disease should not be lost sight of does not lose any of its importance because of the fact that since the words were written, the epidemic has died down. There is no guarantee that another visitation may not occur at some future date, and it would appear as if public opinion, as reflected in the evidence taken by the Select Committee on Vaccination, of the Victorian Parliament, were inclined to under-rate the prophylactic value of vaccination. With a partly protected community, and a want of uniformity in the administration of public health matters in the various States, it would be very short-sighted to trust to luck during a second epidemic, as has been the case in the epidemic under review.

We therefore conclude, as we began, with a warm recommendation of Dr. Robertson's excellent record of the New South Wales small-pox epidemic of 1913-1915.

Over-Seas Club Tobacco Fund

Do you smoke?

If you do, there will be no need to plead the cause of our soldiers and sailors fighting at the front.

Non-smokers, too, will scarcely need telling what comfort lies buried in a pipe. Read any account of the day's doings at a military hospital, either with the clearing line, or at the base. The doctors and nurses know how grateful their patients are for a cigarette or a pipe of "'baccy." We have been asked to open our columns for a Tobacco Fund, in affiliation with the Over-Seas Club Fund, and accede to this request most readily, because we are assured that the members of the Australian Branches of the British Medical Association will be glad of an opportunity of contributing to the happiness of the brave men serving with the colours.

The Club has arranged with a London firm to supply for 1s. a parcel containing 50 cigarettes, ¼ lb. of smoking mixture, and a few matches, valued, under ordinary conditions, at 4s. The authorities have undertaken to pass

tobacco duty free to the men in the fighting line, and the Club does the rest.

Send one or several shillings to "The Editor, *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney," and mark the envelope, "Tobacco Fund," and write your name and address as legibly as you can on a slip of paper. The names of the contributors will be published each week in these columns, as the only acknowledgement, until the soldier who receives the packet sends you a post-card of thanks. Your shilling packets will go to men in Australian regiments.

We hope that the response to this appeal will be spontaneous, prompt and free. If every member in the Commonwealth would send one shilling, the soldiers would receive 2,000 packets. Some may neglect to do this—we hope not—but to cover this contingency, others will send several shillings. Do not render it necessary for us to appeal again for "smokes" for our "Australian boys."

PLATE ILLUSTRATING DR. S. HARRY HARRIS'S ARTICLE.

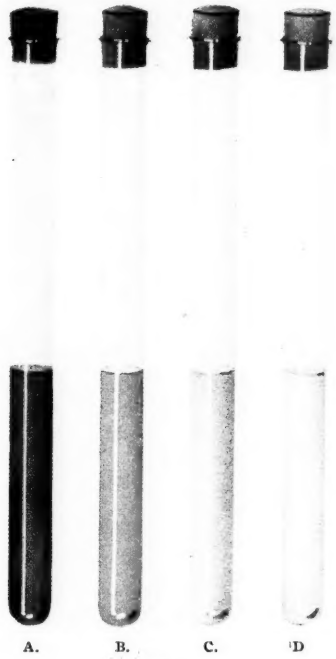

Fig. 1.

Indigocarmine Test.—(*a*) Normal Excretion; (*b*) Satisfactory; (*c*) and (*d*) Unsatisfactory.

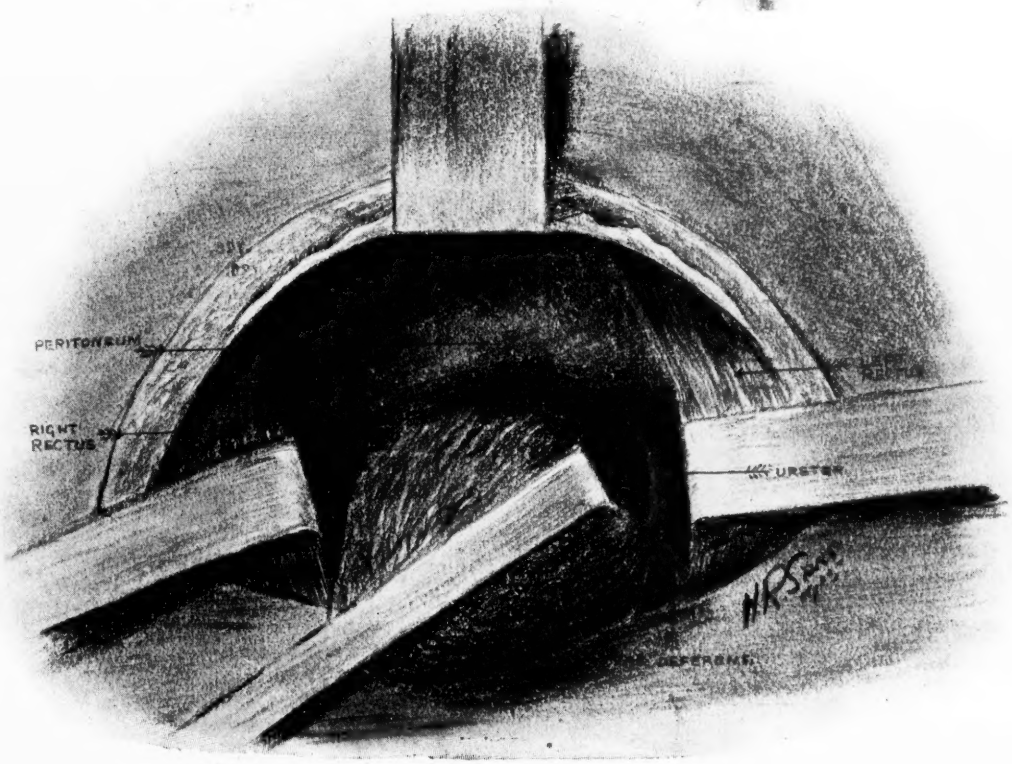

Fig. 2.

Operation for Stone.

Showing exposure of the lower part of the Ureter in the operation of transverse supra-pubic extraperitoneal ureterolithotomy.

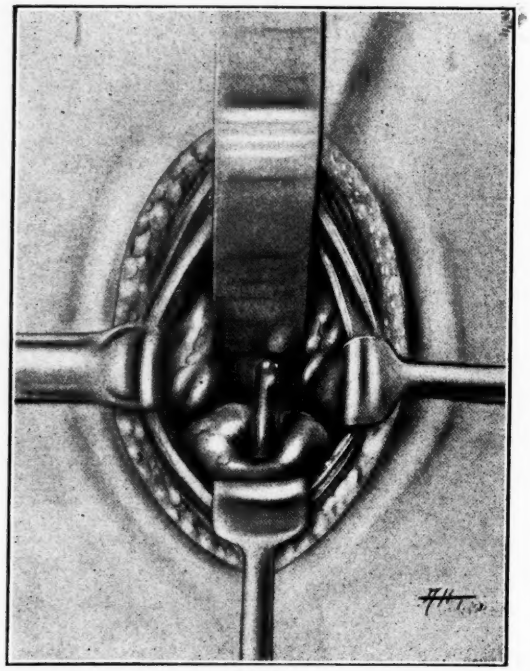

Fig. 3.
Prostatectomy.—Intravesical Exposure of the Prostate.

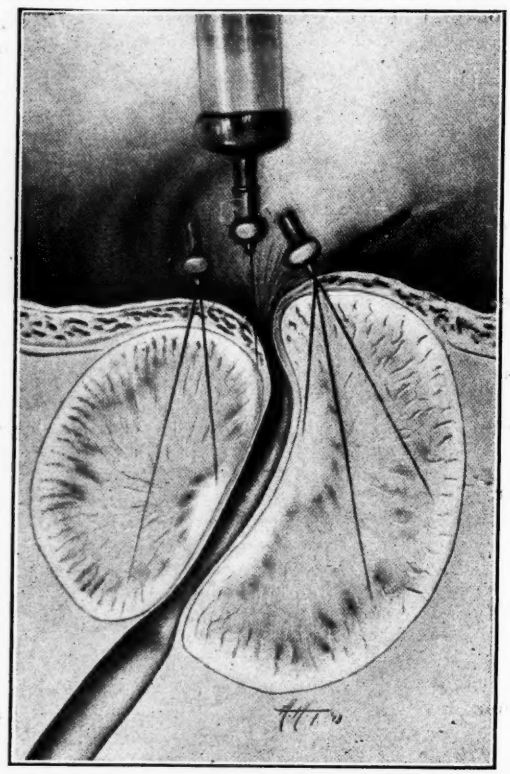

Fig. 4.
Prostatectomy.—Infiltration of Capsule of Prostate Gland, Before Removal.

(Reproduced from Crile and Lower's Work on Anoci-Association.)

The Medical Journal of Australia.

SATURDAY, JUNE 12, 1915.

Our Returning Soldiers.

A short time ago an announcement was made by the Defence Department that a programme had been prepared in connexion with the sick and wounded soldiers returning to Australia. While the details of this programme are not yet available, some information has been received from our representative in South Australia, which will be of great interest to the members of the medical profession.

It is public knowledge that the men requiring special medical or surgical attention will be placed in large military hospitals, at which surgeons under military discipline will be in charge. Those who are convalescent, either on arrival in Australia or after residence in one of the military hospitals, will be sent to their own homes, or to the houses of generous persons who have offered hospitality to Australian soldiers during convalescence. The Government undertakes to provide medical attendance on these men until they are restored to complete health, and presumably any intercurrent disease, both dependent on the original disease or wound, or independent of them, would be treated free of all cost. The treatment in the men's own homes or in the "hospitality houses" will be conducted by private practitioners. The Federal Government is prepared to pay something for this treatment. A suggestion of 20s. for attendance and 5s. extra for medicines has been made. It is argued that no continuous or arduous work will be entailed, inasmuch as the men would be sent back to the military hospital should an acute exacerbation or acute intercurrent affection supervene. We have already recorded that the New South Wales Branch of the British Medical Association has offered to the Federal authority to organize a voluntary medical service, to look after all the wounded and sick soldiers. Were this offer accepted, it is assumed that the Defence Department would not be able to require the practitioners undertaking the work to subject themselves to military discipline. On the other hand, objection has been raised to the Federal scheme, on the ground that in many cases it will be impossible to send a dangerously ill man long distances to the nearest hospital, and, under these circumstances, the practitioner undertaking the alleged light duties will find himself committed to arduous and responsible duties. The matter will be considered by the various Branches of the British Medical Association in the near future. We have no doubt whatsoever but that the members will permit their sense of patriotism to guide them to a wise decision. Mercenary motives cannot influence members of the medical profession in this matter.

In South Australia, a military hospital of 250 beds will be organized. The Committee of the Royal Institution for the Blind have made a most generous offer. As is well known, this excellent institution has been struggling to obtain a suitable home for the past 30 years. Difficulties have been overcome, and patience and hard work have been rewarded. The new house is practically completed. The Committee have made a great sacrifice in renouncing this cherished dream by handing over the whole building to the Defence Department. Some alterations will be required, such as the provision of kitchens, the adaption of the sanitary arrangements to its new purpose, etc., but for the rest, the Institute will make an ideal military hospital. It is situated centrally, being opposite the Children's Hospital. The State is placed under a deep obligation to the Committee of this excellent institute.

A second hospital for convalescents is to be provided, and will accommodate a further 250 men. This hospital will be situated at Torrens Park, near Mitcham, at the south of Adelaide. The house is owned by Mr. R. Barr Smith, a wealthy and most philanthropic citizen of Adelaide. Mr. Barr Smith has already placed the city under several debts of gratitude through his benefactions to the University, the Cathedral and other public buildings. He has undertaken to furnish and equip the convalescent hospital. In this manner, the immediate needs of South Australia will be met. As stated above, those men who are well enough will return to their own homes or to the "hospitality houses."

The Defence Department recognizes that the British Medical Association represents the medical profession in Australia, and has turned to it for advice

and assistance in this matter. The members will be enabled to contribute to the good work, if the suggestions put forward are reasonable, practical and large-minded.

PUBLIC HEALTH LEGISLATION IN VICTORIA.

According to the Hon. J. P. Jones, member of the Victorian Legislative Council for East Melbourne, progress is being made in connexion with the Public Health Bill. He devoted a large portion of a comparatively long speech in the debate on the motion for the adoption of the Address-in-Reply to the Governor's speech, on April 28, 1915, to this subject. The whole speech deserves careful study, and it is quite essential that developments must be watched with the utmost caution. The Public Health Bill foreshadowed is something different from the Public Health Bill with which Victorians have become familiar. The Minister of Public Health, the Hon. J. D. Brown, is said to have been engaged in the drafting of a new Bill last year. The Parliamentary draftsmen were too much occupied in other directions to have time to spare for a measure dealing with the health of the community. For this reason, an outside draftsman has been engaged to prepare the Bill. The Hon. J. P. Jones is anxious to see the draft, and to find the many suggestions on which he touched within its clauses. The speech contains many excellent propositions in questions of detail, but it contains but a few points of principle. Pending the production of a Bill, the discussion of details may be regarded as premature. But the *motif* running through the speech calls for preliminary notice now. The honourable member has the very highest regard and admiration for the medical profession in Australia, and especially in Victoria But he believes that "the organization of their knowledge and intellect would be for the betterment of the whole people." The "magnificent medical profession in Victoria requires organization." This defect in the medical profession is recognized by the Hon. J. P. Jones in the fact that sick people often fail to obtain medical assistance sufficiently early because of a lack of means. Sometimes they do not care to go to a charitable institution, and very many people are said to be unable to go to a hospital. What does this mean? The organization at which the Honourable J. P. Jones is aiming is without doubt a State Medical Service. He practically admits as much, when dealing with the economic aspect of public health. He would deflect some of the money spent on immigration to the safeguarding of the lives of the native Australian. How the knowledge and intellect of the medical profession is to undergo a process of organization, is not clear. It is a curious experience, but not an uncommon one, that the politician regards the question of the prevention and cure of disease in the light of administration, and does not take development into consideration. It is recognized that many and perhaps the majority of the infective diseases are preventable. But our knowledge at present does not admit of this prevention being put into practical effect. It is easy to speak of infantile diarrhœa as a disease due to erroneous methods of feeding, and to wipe it clean off the slate—on paper. But every physician who has had experience of children's disease is aware that the ætiology of this infection is not a simple matter; that many factors participate in the spread of the infection, and that no amount of administrative measures will suffice to effect more than a reduction in morbidity and mortality. The same applies to all other forms of disease. As far as the medical profession is concerned, it is at least doubtful whether any organization from without would result in greater efficiency. The prevention of disease can only be effected by a judicious application of scientific knowledge to practice, and by a co-operation of the administrator, the practitioner, and the investigator. The administrator best equipped for this work is the experienced Health Officer; the practitioner who will further the work most surely is the family doctor, who stands in intimate relationship with his patients, and who is trusted and obeyed; while the investigator who will contribute the most valuable advances is he who is trained in the laboratory, and who has worked year in, year out, without any restrictions, and without having to produce results satisfactory to a lay committee. The Health Officer must, of necessity, be a State or municipal employé, but both the practitioner and the investigator will render less good work if they lose their independence, and become salaried servants of public bodies.

The second theme of the Hon. J. P. Jones's dis-

cussion will find favour throughout the length and breadth of the land. It is that the work of looking after the health of the community must be entrusted to trained and registered persons. Doctors registered in accordance with the law of the State, and nurses and midwives enrolled by a competent authority should be the only individuals allowed to handle persons in sickness or in those states which may require medical skill to prevent disease and death. Prohibition of treatment by unregistered practitioners and State registration of nurses are measures which would contribute greatly toward the reduction of disease and a fatal issue. Complicated health legislation and rapid introduction of experimental measures are fraught with danger, and for this reason it will be essential to watch the promised Public Health Bill, lest it contain provisions which are doomed to failure.

FOR THE RED CROSS.

War is war! Men take their lives in their hands and cast them in the eternal lot; to pass into the Great Beyond or to return wounded in mind, if not in body. The horrors of war cannot be imagined, and its barbarity defies description. Those who stay at home and seek their knowledge of this most ghastly thing from the censored, garbled versions printed to satisfy public taste, learn of hate, and wholesale slaughter; of deeds of fierce courage, achieving destruction of enemy lives. Nothing of the story is told that lends a mitigating atmosphere to the dark struggle and the wanton waste of valuable boys and men. But in the midst of all the horrors, there is a bright light spent, a light born of pity, kindness and humanity. The work of the Red Cross Society stands out, together with that of the organized Army Medical Service, in contrast to the devastation of warfare. The world knows but little of this work, and will probably never know it all. To bring it home in its full significance has been the task of the authors of a work called "The Way of the Red Cross."* They own that a complete record of this work cannot be encompassed in the pages of one book, but they have achieved much in relating stories culled from life, which reflect the splendour of the task attempted and done. The stories are full of humane incidents, pathetic in each detail, real as no phantasy can picture them. The grim humour of the Irishman who was sent one night to pick up a wounded officer in the zone of shell fire, the pathos of the Yorkshire gunner who failed to realize the injury received from a shell which put both gun and man out of action for all time, bring to the reader more reality than all the official reports and long lists of the roll of honour. Those who read this book will surely ask themselves: Can I do nothing to help? A little has been done by buying it; the little of contributing a half-a-crown to *The Times* Fund for the Sick and Wounded. For a brief span, all thought of hate is dispelled after its perusal, and the one thought left is to assist those self-sacrificing and hard-working men and women who are straining heart and soul for the healing of the shattered minds and bodies of the soldiers fighting for the Empire.

Were it necessary to add a further word to recommend this book to the public, no better or more eloquent appeal could be voiced than that penned by Queen Alexandra in a short preface. She says of those nursing our brave and wounded soldiers, that she and the whole nation owe them their undying and unfailing debt of gratitude.

* The Way of the Red Cross, by E. Charles Vivian and J. E. Hodder Williams; published for *The Times* by Hodder and Stoughton, London. Price, 2s. 6d.

LEAD-POISONING IN CHILDREN.

Twenty-three years ago, attention was directed to a condition resembling chronic poisoning by lead in children living around Brisbane. Five years later, Jefferis Turner noted that seventy-six cases had been treated during six years at the Brisbane Children's Hospital, the ages of the children being between 6 and 12 years. He divided these cases of chronic lead poisoning into four groups: (1) Paralytic cases, showing symmetrical wrist and foot drop; (2) cases suffering from severe and persistent convulsions; (3) cases characterized by pains in the abdomen and limbs, by an habitual constipation and by an occasional blue line on the gums; and (4) cases with a neuritis involving the optic and oculomotor nerves.

This condition in children has not been recorded from other parts of Australia, or from other tropical countries. In fact, lead poisoning is not at all frequent in children in any part of the world.

Drs. Breinl and Young† observed in 1913 a series of 22 cases in children living in Townsville. The very early cases had no definite symptoms. The children became peevish and fretful. They complained of slight pains in the epigastrium and legs. In cases of longer duration, the pains in the abdomen became continuous. Many cases showed foot- and wrist-drop. Cerebral symptoms, ranging from fretfulness to a state resembling mania, were common. Anæmia was present only in cases of long standing.

The prognosis in the early stages was, on the whole, good. After two or three attacks, the recovery of the use of the limbs took months. Sometimes the patients were permanently crippled. The mental symptoms disappeared, under treatment, in a comparatively short time.

Amounts of lead that could be measured were found in the urine and fæces of these cases. The fæces usually contained greater quantities of lead than the urine. Special care was taken to ensure that all the re-agents used were free from lead. Every precaution to exclude error in the identification of the lead was adopted in this investigation.

The source of the lead was not ascertained, but the failure to detect lead in the urine of healthy children living in the same houses as some of the

† Annals of Tropical Medicine and Parasitology, VIII., December, 1914, pp. 565-574 and 591-608.

patients negatived the suggestion that all children absorbed lead derived from the paint used on the walls of the wooden houses.

They concluded that their results had proved that lead poisoning was not an uncommon occurrence in children, and expressed their astonishment that similar cases had not been recorded from other parts of the tropics where lead paint was employed.

ABATTOIRS IN ADELAIDE.

On November 20, 1913, a Commission was appointed to enquire into the management, working and control of the Metropolitan abattoirs, and into the whole question of the meat supply of Adelaide, and to report. An interim report was published in April, 1914, and the final report was presented on May 27, 1915. This report contains many important recommendations, some of which have a more or less direct bearing on hygiene. The first paragraph of the recommendations deals exclusively with the composition of the Abattoirs Board, and appears to be equitable and necessary. No. 2 suggests that all cattle under control be fed under cover. Nos. 3 to 9 are concerned with scales of fees and other purely commercial matters. No. 10 contains a suggestion for future legislation. The Commissioners are of opinion that the practice of bringing bacon into the Abattoirs should be prohibited in those cases in which the swine were not inspected and branded immediately after slaughter; and that the same prohibition apply to the sale of bacon cured either outside or within the Abattoir area and any smallgoods made in any district. In recommendation 12 the Commissioners advise that future legislation should include a clause prohibiting the exposure for sale, the attempt to sell or the sale of bacon or smallgoods imported into South Australia, unless the carcases or goods be branded with the word "Imported" in an easily legible manner, and unless they be accompanied by a certificate from a public authority of the country from which they were exported, to the effect that the meat was wholesome.

The rest of the recommendations deal with the subject of scarcity of stock and the means to be adopted to meet the difficulties.

The importance of adequate control of beasts brought into an abattoir and of all meat sold cannot be over-rated, and no commercial consideration may be allowed to cause a relaxation of this control. We understand that while Adelaide is satisfactorily safeguarded in this respect, the country districts in South Australia fail signally to exclude unwholesome meat from being placed on the market. The legislative proposals of the Commission would therefore effect a material advance as far as the Metropolis is concerned, but would leave the country districts in the same position as before. It is to be hoped that the Department of Public Health will take a large view of this subject, and see that the whole State enjoys equal privileges.

MEDICAL WOMEN AND WIVES OF MEDICAL MEN.

On June 1, 1915, a meeting of the medical women and the wives of medical men of Sydney and suburbs was held at the Sydney Town Hall, for the purpose of discussing the best method of helping the Red Cross movement. Lady Anderson Stuart was appointed Chairman, and on the formation of a Society, President. It was determined that a fund entitled "Gift from the Medical Women and the Wives of the Medical Men" be instituted, and that the wives of country practitioners, as well as those ladies who had been invited to attend the meeting, be asked to contribute not less than one guinea.

The proposition that "Australia Day" be chosen as the day on which the subscriptions should be collected found favour with those present. In view of their association with the medical profession, it was felt that the money collected should be devoted to the Red Cross. Although a minimum donation has been fixed, many will doubtless wish to subscribe larger amounts. During the course of the meeting, twenty donations of £5 5s. each were promised. Medical women and the wives of medical men of New South Wales are invited to forward subscriptions to either of the Joint Honorary Secretaries (Mrs. G. Lane Mullins, "St. Meldan's," Dover Road, Rose Bay, and Mrs. Wilfred Fairfax, "Allesley," New South Head Road, Rose Bay) on or before June 21, 1915. A meeting will be held in the Library of the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on June 24, 1915, at 11 a.m. It is hoped that there will be a large attendance. The Honorary Secretaries are Mrs. Sydney Jamieson and Mrs. E. H. Binney.

University Intelligence.

THE UNIVERSITY OF WESTERN AUSTRALIA.

(From our Special Correspondent.)

The number of students at the University is increasing steadily year by year. This year there are 214 enrolled, as compared with 182 in 1914. Of this number, 126 are men and 88 women. There are 132 matriculated students and 83 immatriculated. The numbers are satisfactory, in view of the fact that the University has been in existence for only three years.

In addition to the regular courses, special courses of lectures in Agriculture, Biology and Optics have been arranged. These will be held by Professor Paterson, Professor Daken and Professor Ross respectively. The lectures will be on semi-popular lines. So many have availed themselves of the opportunity afforded them that it has been found necessary to arrange for a repetition of the lecutres. A large number of teachers have desired to take both the biology course and the optics course. Professors Dakin and Ross have, therefore, overcome the difficulty by lecturing twice on the same evening. The students have thus been enabled to attend both lectures with the minimum expenditure of time and energy.

The election of two members of the Senate to replace the two members retiring in order of rotation, was carried out by Convocation recently. Dr. Gertrude Mead, who has been a member of the Senate since its formation, was re-elected, and Mr. W. J. Hancock, Government Electrician, was successful in gaining a seat. Mr. G. M. Roberts was nominated by the Government. The retiring members were Dr. Smith and Mr. Sandover.

Mr. P. H. Fraenkel, B.E.E. (Melb.) has been appointed lecturer in electrical engineering.

The Workers' Educational Association, which holds its meeting at the University, and which is closely connected with it in other ways, has arranged for a series of instructive lectures during the winter. The attendance at the lectures which have already been delivered has been gratifying. This Association has proved itself of value to a large number of manual workers, and also to the members of other sections of the community.

Dr. Athelston Saw, a member of the Senate, has decided to stand for election to the Legislative Council for the metropolitan suburban area at a special election to take place in June. The seat has become vacant by the death of the late member.

THE UNIVERSITY OF SYDNEY.

In order to meet the demand for additional medical officers for active war service, the Senate of the University has decided to hold a final examination for fifth year medi-

cal students in September next, instead of in the following March, for those who undertake to enter upon active service. Arrangements have also been made for the present fourth year students, by working during vacation, to complete their course at an earlier stage in their fifth year than they would under ordinary conditions.

The Senate has also passed the following general resolution in regard to students of all faculties:—

> "That students who undertake, in writing to the Warden, to volunteer for military or naval service, be granted an examination at the end of the second term, and on passing that examination shall be held to have passed the yearly examination."

This resolution will apply to those who have been actually certified by the military authorities as fit for active service, and arrangements have been made with the military authorities for their medical examination.

AUCKLAND UNIVERSITY COLLEGE.

For a considerable time past, the Council of the Auckland University College have been endeavouring to obtain a new home. The Government has been slow in moving in the matter, and time after time various bodies interested have attempted to press suitable sites on it, but with little effect. During the third week of May, the Council determined to press the Government to provide a new site without loss of time, as the improvement scheme in Jermyn Street was progressing, and when the old university buildings were reached, a right-of-way would be required through the College block.

On May 28, 1915, the Minister for Internal Affairs received the members of the College Council and listened to their views. It is understood that the Minister will place the matter before the Minister for Education within a short time, and the Government at last realizes the urgency of the position.

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Hospitals.

MAITLAND HOSPITAL.

The accommodation in the ward set aside for persons suffering from notifiable infective diseases at the Maitland Hospital is proving too small for the district. The difficulty in which the Committee is placed is not a new one; plans for new wards have been prepared, and have received the approval of the Committee. For financial reasons, it has been found impossible to proceed with the work of building. It has been reported that during the last week one patient has been placed in a bathroom, and another in quarters usually occupied by nurses. The Government has been asked to place the sum of £4,000 at the disposal of the Committee, in order that it may provide sufficient and adequate accommodation.

THE CHILDREN'S HOSPITAL, PERTH.

The appeal made for the Children's Hospital, Perth, for funds to enable the Committee to continue the good work has met with fair response. As already recorded in this journal, Mr. Boan, the Chairman of the Committee, has promised £500, provided that an additional £2,500 can be collected before the end of June, to cover the cost of maintenance. A street collection realized £1,280, and other donations of large and small sums have brought the total up to £1,600. The Secretary of the Hospital has issued an urgent appeal for £900, in order that, with Mr. Boan's £500, the amount required may be forthcoming. On May 24, the proceeds of the evening's entertainment at the Shaftesbury Theatre were devoted to the cause. The Secretary is confident that the public will not permit the closure of the children's wards because of the want of a sum like £900.

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The Director-General of Public Health of New South Wales calls attention to the publication, on May 12, 1915, in the Government Gazette, of a notice prohibiting the advertisement or sale, after March 27, 1915, of the following drugs and appliances used in connexion with the treatment of the "Natura Health Company," carrying on business at 297 Elizabeth Street and elsewhere, viz.:—

> *Natura capsuled Suppositories, the Natura cerate massage,* and *the Natura herbal tea.*

According to Section 17 of the Pure Food Act, 1908:—

> "No person shall advertise or sell any food or drug or appliance in contravention of any notification as aforesaid, and no proprietor or manager of a newspaper or other public print shall publish any advertisement prohibited under this section, and no person shall print any such advertisement." (Penalty, first offence, £20.)

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Naval and Military News.

We have been informed officially that medical men are required by the Defence Department. Practitioners desirous of offering their services will be accepted if found physically fit. Should any practitioner experience difficulty he should apply to Dr. Cuscaden, Victoria Barracks, Melbourne, who is in charge of this branch of the work. Those who are accepted for service will be sent to the front as soon as possible.

Steps have been taken at the Universities of Melbourne, Sydney and Adelaide to shorten the medical course in order that senior students may present themselves at the final examinations at an earlier date than they would in normal times. A Bill has been presented to the Victorian Parliament for the object of enabling those who have volunteered for service and have passed their final examinations before the end of the prescribed course to register their degrees. A slight amendment of the Medical Act of New South Wales will be suggested within a short time. It must, of course, be understood that only those who undertake to offer themselves for service in the A.A.M.C. will be permitted to take advantage of the shortened course.

It is with great regret that we have to record the death of Dr. Gordon Clunes McKay Mathison from wounds received at Gallipoli. A short notice of his achievements and appreciation of his sterling qualities will be found on another page of this issue.

The death of Lieutenant Morris Burnett, R.A.M.C., M.R.C.S., L.R.C.P., is reported from the Persian Gulf. Lieutenant Burnett qualified in 1911, and served as House Physician at his old hospital, St. George's, in the following year.

Captain Edward Bruce Allnutt, R.A.M.C., M.R.C.S., L.R.C.P., and Captain Duncan Macdonald Cochrane Church, I.M.S., M.B., Ch.B. (Edin.), have been wounded in the Persian Gulf. Captain Allnutt was a student at St. Bartholomew's Hospital, and qualified in 1909. He subsequently held the position of House Physician at Westminster Hospital and Casualty House Surgeon at the West London Hospital. Captain Church graduated in Edinburgh in 1909.

In the London *Gazette* of April 10, 1915, Lieutenant James Robertson Campbell Greenlees, R.A.M.C. (2nd Field Ambulance), M.B., is entered as a recipient of the Distinguished Service Order for great gallantry and devotion to duty at Neuve Chapelle from March 10 to March 14, 1915, in attending to the wounded under heavy fire. Dr. Greenlees has been twice previously brought to notive for similar acts of gallantry.

The Military Cross has been awarded to Lieutenant J. G. Priestly, R.A.M.C., M.B.

The following announcement has appeared in the Commonwealth *Gazette* No. 52, under date June 2, 1915:—

Promotion.

His Excellency the Governor-General, acting with the advice of the Federal Executive Council, has been pleased to approve of the following promotion being made in the Australian Imperial Force:—

> Army Medical Corps—Major J. W. Barrett, hitherto borne as Supernumerary, is brought on the authorized establishment, and to be Lieutenant-Colonel.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(182) The Uses of Paraffins.

Pritchard (*Practitioner*, April, 1915) discusses the uses of paraffin in general practice. He made the experiment in 1906 of administering petroleum in a number of intractable cases of constipation in infants. He states that petroleum is most useful in cases of constipation due to excess of fats in the foods. He points out the value of petroleum in constipation in adults, especially where this is due to intestinal stasis. He considers that the mechanical effects of paraffin as a lubricant explains its high repute in cases of chronic bronchitis and other pathological conditions secondary to intestinal intoxication. Another condition in which paraffin is invaluable is that of thread worms in children. Paraffin may be administered as refined liquid petroleum, as one of the emulsions, or as a solid, eaten like a confection. The liquid may be given pure, or coloured with chlorophyll, and flavoured with essence of peppermint or menthol. The dose for each patient must be determined by experiment, as some persons are susceptible and others resistant to paraffin. The emulsions are most useful preparations, since they mix with other fluids. Their disadvantages are their expense and their large dose. They rarely contain more than one-third their volume of pure paraffin. They are most valuable for infants and children. The solid forms can be cheaply worked up with chocolate and casein to yield a most efficient and cheap laxative.

(187) Drugs as Blood-pressure Elevators.

Watson (*Practitioner*, April, 1915) has investigated the effects of certain drugs on the systolic and diastolic pressure of healthy persons. He finds that atropine, camphor, cotarnine, digitoxin, ergotoxin and strychnine in medicinal doses do not raise the human blood-pressure. Adrenalin raises the systolic blood-pressure and lowers the diastolic pressure. Since it causes faintness and palpitation he considers it too dangerous for this purpose. Eserine raises the systolic and diastolic pressures, but gives rise to nausea, sweating, and sometimes vomiting. Tyramine, in doses of 0.06 gm., raises the systolic pressure about 25 mm. Hg. in 10 minutes. It has little effect on diastolic pressure, and the pulse rate. It is recommended as safe and efficient for this purpose.

(188) Succinimide of Mercury in Gonorrhœa.

Lake (*Medical Record*, April, 1915) has treated 20 cases of gonorrhœa by intramuscular injections of succinimide of mercury. Of the first eight patients seven received doses of 40 mgm. and one 13 mgm. Seven became free from gonococci promptly, and one patient still showed gonococci after two injections of 40 mgm. of the drug. Twelve patients received initial doses of 65 or 78 mgm. of the salt. Ten became promptly free from gonococci, one case was not improved, and two may have been re-infected. Local treatment was used in seventeen of the patients. The injections were given into the buttocks with a glass syringe fitted with a platinum needle. The injections cause considerable pain for an hour or two. Careful bacteriological examinations were made before pronouncing a patient free from gonococci. The treatment diminished the average period of confinement in hospital from 32 to 12 days.

(189) Retention of Salvarsan.

McGurn (*Medical Record*, April, 1915) considers that the retention of salvarsan is due to the fact that the retained portion is not in chemical solution when introuced into the blood stream. During its manufacture salvarsan is physically reduced to minute granules. When suspended in water or salt solution these granules become gelatinous. They may be present in great numbers without interfering with the transparency of the mixture. If the fluid used for suspension of the salvarsan contains particles such as bacteria, living or dead, these particles act as nuclei of precipitation for the swollen granules. When a solution of soda is used to produce chemical solution, it is not sufficient to employ the minimal quantity that converts the fluid from an acid to an alkaline solution. This has been demonstrated by filtering the alkaline fluid through cotton wool or porcelain, when a brown residue can be seen on the filter. Three or four drops of the 15% soda solution are required after the neutral point has been passed to give a chemical solution.

(190) Pellagra Treated by Autoserum.

Palmer and Secor (*Journ. Amer. Med. Assoc.*, May 8th, 1915) have treated seven cases of pellagra with weekly injections of 1 c.cm. of their own serum. They all have shown improvement. Two patients have passed critical seasons without recurrence of symptoms, two others are still, to all appearance, well, and three others improved, and have been lost sight of. The technique is simple. At night a piece of cantharides plaster is placed on the chest. In the morning a blister will be formed. The plaster is raised, and a hypodermic needle introduced into the blister and 1 c.cm. of serum withdrawn. The injections were made in the arm. The beneficial effects can be seen from the first injection.

(191) Vaccines in Complications of Pulmonary Tuberculosis.

F. W. Wittich (*Canadian Med. Assoc. Journ.*, April, 1915) deals with the subject of secondary or mixed infections to pulmonary tuberculosis. He concludes that in a certain number of cases other organisms play an important rôle. These organisms may be the primary infecting agent predisposing to tuberculosis, or their presence may accelerate the growth of tubercle bacilli to such an extent that the cases should be called mixed infections. The discouraging results of vaccine therapy are due in many instances to faulty technique in their preparation and administration. As the ordinary preparation of homologous vaccines from sputum is attended with difficulty, the author describes a practical method of obtaining the vaccine. The mouth is washed out with hydrogen peroxide and sputum is discharged into a suitable bottle. A lump of sputum is then transferred to an Erlenmeyer flask one-third full of sterile, distilled water. The flask is well shaken until several pieces the size of a pea are freed. These are transferred to a second flask, and so on until in the sixth flask the pieces are about the size of rice bodies. Plain agar, blood agar, and broth tubes or plates are inoculated with this material. After growth and identification of the organisms, the cultures are emulsified with 2 or 3 c.cm. of normal saline solution. The dose of the vaccine must be varied according to the age of the patient, the stage of the tubercular affection, the physical signs, etc., and the vaccine should be modified in accordance with the results of examination of the chest and sputum. The sputum of 196 patients was examined, and it was found that pyogenic organisms predominated. Hæmolytic streptococci were usually associated with the severest clinical symptoms, and also with asthma. These cases responded particularly well to vaccines. The author is of opinion that the vaccine therapy of secondary infections complicating pulmonary tuberculosis is a valuable aid in the treatment, when used with rest, fresh air, and good food, or in connexion with tuberculin in selected cases.

(192) Bitters and the Hunger Mechanism.

Carlson, van de Erve, Lewis and Orr (*Journal of Pharmacology and Experimental Therapeutics*, November, 1914) have continued their studies of the hunger mechanism in man, with an extensive examination of the action of the vegetable bitters. They have used preparations of gentian, quassia, calumba, humulus, condurango, quinine and strychnine. When used in therapeutic quantities, and introduced directly into the stomach, so as not to come in contact with the mouth and œsophagus, these bitters have no direct action on the hunger mechanism. The gastric hunger contractions continue in their normal rate and strength, except for a transient inhibition. Introduced into the mouth, the bitters inhibit the gastric hunger contractions in direct proportion to their stimulation of the sense of taste. This inhibition of the hunger contractions is accompanied by cessation of the consciousness of the hunger pangs. There is no after effect in the way of augmentation of hunger contractions and hunger sensations.

UROLOGY.

(193) Calculus in the Lower Part of the Ureter.

J. E. Adams deals with the diagnosis and treatment of calculus in the lower or pelvic portion of ureter (*Lancet*, April 24, 1915). He is of opinion that the surgeon should feel humiliated if, after the performance of appendicectomy the patient passes a calculus *per urethram*. Impaction of calculus in the last inches of the ureter gives rise to irritation of the bladder. There is frequency of micturition, pain throughout the whole length of the urethra, painful emissions and hæmospermia. Pain is the most constant symptom, and may be pelvic or abdominal. Attacks of pain of the nature of colic, associated with vomiting, sweating and hæmaturia are not uncommon. Fever is present at times. The ultimate diagnosis usually rests with the result of X-ray examination. It may be possible to palpate the calculus, either per rectum or per vaginam. Obstruction to the passage of a ureteric bougie may assist diagnosis. In differentiating between calculus and phleboliths the shape will usually lead to a correct diagnosis. Calculi are frequently bean-shaped, and pointed at one extremity, whereas phleboliths are spherical. In regard to treatment, the author finds Judd's operation of exposing the ureter by the supra-pubic route highly satisfactory. After the extraction of the stone, he sutures the small incised wound in the ureter with fine cat-gut at right angles to the long axis.

(194) The Prognosis and Treatment of Acute Nephritis.

J. Phillips (*Cleveland Med. Journ.*, February, 1915) states that acute nephritis may end fatally, or the patient may recover with a damaged kidney, or complete recovery may occur. He admits that some clinicians deny the possibility of anatomical recovery, and maintain that there is always a danger that a latent nephritis may become active again. He cites a number of cases illustrating the types of cases of acute nephritis seen in private practice. In all these cases there had been complete recovery as far as could be determined by analysis of the urine, blood pressure determination, and physical examination of the heart. The sulphophenolphthalein test, and the determination of the non-protein nitrogen are valuable prognostic methods. In dealing with the treatment, the author speaks of the importance of adopting prophylactic measures. Treatment proper should consist of limiting the extension of the inflammatory condition, reducing the work of the kidney to a minimum, and applying special remedies for individual symptoms, such as uræmia, oedema, etc. Rest in bed between blankets in a warm room, with good ventilation, is essential. The patient should be well purged with saline cathartics, e.g., magnesium sulphate or citrate, or calcined magnesia. The diet should be bland, easily digested and light. During the earliest stages milk should be the only food. When oedema is present the quantity of fluid should be limited. At a later stage water may be given more freely. The amount of salt in the diet should be limited. Sweating should be induced by vapour baths, hot packs, or hot air baths. In regard to diuretics, the author states that acetates and citrates have no particular value. Caffeine is useful at times, as are diuretin and theocin. Infusion of digitalis leaves is very valuable. For hypertention diaphoretics and cathartics usually suffice, but nitro-glycerine may be necessary. The author does not recommend venesection save in full-blooded patients.

(195) Tar in the Bladder.

G. de Tarnowsky (*Journ. Amer. Med. Assoc.*, May 1, 1915) records a very unusual case of a foreign body in the bladder. A low-grade Polish labourer was subjected to some ill-treatment by his American fellow-workers. The man was forcibly laid out, uncovered, and thin, rolled-out rodlets of tar were inserted into the urethra. After he was released, one piece, which was protruding was withdrawn from the urethra. The man was in much pain. There was marked dysuria. The urinary stream was small, and micturition was frequent. The urine contained blood and hyaline and epithelial casts and leucocytes. By the cystoscope a very acute cystitis was recognized. Irrigation was carried out. The acute symptoms passed off, but later the patient complained of chilly sensation and severe pain in the lower part of the abdomen. Cystotomy was performed at this date, and a mass of the consistency of putty was found in the bladder. It was composed of calcareous salts (calcium oxalates and urates) and a substance which burned with the smell of tar. The bladder was greatly hypertrophied, and the mucosa was in a condition of chronic cystitis. The recovery was uneventful.

(196) Peri-renal and Peri-ureteral Tumours.

C. A. Hamann records the histories of two patients for the purpose of illustrating the clinical aspects of peri-renal and peri-ureteral tumours (*Cleveland Med. Journ.*, February, 1915). The first patient, a woman of 68 years, had a tumour occupying the umbilical and left lumbar regions. The nature of the tumour was not discovered prior to the operation. A peri-ureteral lipoma, measuring about 6 inches in diameter, was found, and several smaller lipomata were discovered in its neighbourhood. It was noticed that a tubular structure passed right through the centre of the tumour. Although it could not be decided whether this was a vein or the ureter, it was ligatured in two places, and the piece included between the two ligatures removed with the growth. The kidney had to be removed subsequently, as it proved that the tubular structure was the ureter. The patient made a good recovery. The second patient was a man aged 61. He had noticed a mass on the right side for over two years. He had lost weight, but there had been no hæmaturia and no pain. The growth extended to the anterior superior spine of the ilium, and beyond the middle line. It was recognized as a renal tumour. On operation a peri-renal tumour, measuring 8 inches by 4 inches, was found. Some difficulty was experienced in removing the growth, during which process the kidney was displaced, and its capsule torn. The kidney was therefore removed with the tumour. The patient died of œdema of the lungs six days after operation. The tumour proved to be a mixed fibroma and myxoma, and there was atrophy of the renal cortex, with interstitial hæmorrhages.

(197) Renal Tuberculosis.

Henry H. Morton, in a clinical lecture on tuberculosis of the kidney (*Medical Times*, February, 1915) illustrates some of the difficulties connected with the diagnosis and treatment of this condition. The patient on which he operated was an unusually muscular man. The usual incision did not suffice to bring the kidney into view. He was therefore compelled to divide a large bunch of fibres of the *erector spinae* muscle. The pedicle was very short, and had to be tied in two halves and each half divided before the organ could be isolated. The diagnosis had been made under some difficulty. The patient noticed terminal hæmaturia nine months previously. After about six months the bladder was normal to cystoscopic inspection. A catheter passed into the right ureter became blocked. The indigo-carmine test was positive on the left side, and the urine from this kidney was free of pus. Eleven grains of urea to each ounce were excreted on the left side. The bladder urine contained pus. Later the indigo-carmine test was positive in 12 minutes from each kidney. The urine from the right kidney contained 2% of pus and 9 grains of urea. A radiograph excluded stone in the kidney or ureter. The urine from the right kidney was injected into the peritoneal cavity of a guineapig. After three weeks the guineapig was killed, and tuberculosis of the omentum, spleen and liver was found. The author regards this method of determining tuberculosis more valuable than the application of the tuberculin test.

(198) Vesical Calculi in Young Boys.

W. E. Nickolls Dunn (*Lancet*, April 10, 1915) records two cases of vesical calculi in male children. The first patient was 2½ years of age. It was necessary to open the bladder by the supra-pubic route, but even after this was done the stone had to be broken up by a lithotrite before it could be removed. It occupied practically the whole bladder. In the second case the patient was a boy of three.

British Medical Association News.

SCIENTIFIC.

A meeting of the New South Wales Branch was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on May 28, 1915, Dr. George Armstrong, the President, in the chair. Part of the proceedings have been reported in *The Medical Journal of Australia*, June 5, 1915, p. 540.

Dr. S. Harry Harris read a paper on "Some Observations on the Diagnosis and Surgical Treatment of Pyuria" (see p. 552).

Dr. Ralph Worrall, turning his attention to the diagnosis of what portion of the urinary track is responsible for the symptoms of pyuria, remarked that he saw a very large number of cases in which the trouble could be traced to cystitis. He had much more difficulty in determining the ætiological factor of the cystitis than in tracing the pus to a particular part of the urinary tract, and in the ætiology the cystoscope did not help him as a rule. In regard to the method of approaching calculi, it did not appear to him that Judd's operation or Dr. Harris's modification offered any advantage. His experience of Wertheim's operation had led him to the conclusion that the safest method to be followed in the operative removal of stones near the bladder was the transperitoneal method. He held the opinion that the risk of infection when the cellular tissue was opened was considerably greater. By operating through the peritoneum this risk was markedly diminished. In his cases he had found it advisable, after the removal of the stone from the ureter, to push a drain downwards through the vaginal vault. He expressed his indebtedness to Dr. Harris for his valuable contribution.

Dr. Gordon Craig regarded Dr. Harris's paper as an excellent review of the various methods of diagnosis. In regard to the dye-stuffs which may be used with advantage, he recognized phenolsulphophthalein. On the other hand, he recognized that that test was best which the surgeon was most accustomed to. He was of opinion that only a limited number of cases of calculi in the ureter were capable of being removed through the cystoscope. He had constructed a set of instruments of his own for this purpose, which he had found very useful, and pointed out that B. Lewis had given a very full description of the methods of applying these long, flexible, cystoscopic instruments. There was no difficulty in slitting up the meatus of the ureter, but the difficulty lay in removal of the stone. As Dr. Harris had pointed out, it was frequently adherent to its ureteral bed. He found that it was usually better to open the abdomen through the suprapubic region, and to effect the removal of the calculus under the guidance of the eye. Even under these circumstances, the removal of the stone might not be easy, especially when it lay within 1 or 1½ inches of the ureteral orifice. He held that Judd's operation of exposing the lower end of the ureter through a suprapubic incision was difficult to improve on. He disagreed with Dr. Worrall that it was more dangerous to open the cellular space than to open the peritoneum. The danger to the peritoneum was considerable in these cases, as the pus often contained highly virulent organisms. Diet appeared to play a not inconsiderable part in the resistance of the peritoneum. It had been shown that when the ureter of a rabbit, *i.e.*, a herbivorous animal, was cut, and the urine allowed to run into the peritoneal cavity, nothing happened, whereas, when the same operation was carried out in the dog, *i.e.*, a carnivorous animal, death occurred invariably. Referring to Dr. Harris's interesting renal calculus case, in which the urine was said to be free from pus and sterile, he asked for information as to the method of examination of the urine. It was a very curious condition.

Dr. Mills said that the thought had struck him in connexion with the question of bacteruria that the kidney was an organ which not only got rid of waste products, but also got rid of bacteria of disease and their toxins. The kidneys might be free from all pathological changes, save those perhaps of a slight catarrh, and yet bacteria might be found in the urine.

Dr. Binney suggested the combination of transperitoneal, suprapubic abdominal section to demonstrate and locate the stone in the ureter, and after it had been fixed, of effecting its removal through an incision in the loin.

Dr. Flynn made a passing reference to the subject of urinary antiseptics. In no department of medicine was there more striking evidence of the good result accruing from a judicious blending of scientific laboratory work with practical therapeutics. Dr. Harris had spoken of vaccines in connexion with his cases, but had left the subject of chemical disinfection untouched. Among the large number of chemical substances employed for this purpose, the most useful, if properly employed, was urotropine. Urotropine was inert in an alkaline medium. In order to understand the action of this drug, it was necessary to remember that it did not act as a disinfectant in itself, but only in virtue of the formaldehyde given off during dissociation. The activity of urotropine ran *pari passu* with the amount of formaldehyde liberated. Its activity was also parallel up to a certain concentration with the acidity of the urine. The therapeutic use of urotropine would therefore depend on the acidity of the urine. If the urine were alkaline, urotropine would be useless until the reaction were changed. How could this be effective? Mineral acids were useless, because they were claimed by the various bases and converted into salts. Organic acids failed because they were dissociated, and carbonates were formed. The best means of altering the reaction was by giving acid sodium phosphate. Less satisfactory, but still efficacious, was ammonium benzoate. If the urine could not be rendered acid by means of either of these two substances, it was advisable to substitute boric acid for urotropine as the urinary disinfectant. He referred to cases in which alkaline urine was accompanied by symptoms of irritation, scalding, etc. He referred to the curious paradox that alkalies remove these symptoms by neutralizing the acid products of bacillus coli. Under these conditions, it was wise to keep the patient on alkalies for two or three weeks. At the end of this period the urine could be rendered acid by giving the acid sodium phosphate, and urotropine could then be employed.

Dr. McClelland spoke of the good effect of catheterization of the ureters in the pyelitis of pregnancy.

Dr. Stacy referred to some cases of slight pyuria, with urinary symptoms, which were due to a definite renal affection. He emphasized the necessity of taking the clinical history carefully in these cases. Dr. Stacy also referred to the symptoms simulating those of pyuria in appendicitis and renal colic, and explained them on the basis of the anatomical relation of the ureter and the affected organs.

Dr. a'Court gave an account of the case referred to by Dr. Harris, of a woman with pyonephrosis. There had been post-operative retention of urine, following the Alexander-Adams operation, which was performed in Melbourne. Catheterization had been resorted to, with the result that an acute infection developed. When she was first seen by the speaker there were all the signs of a bilateral pyonephrosis. As Dr. Harris had pointed out, only one kidney was involved in the pyogenic process. Had the functional tests not been carried out, the operation for the removal of the more affected kidney would probably have been carried out, with the result that the patient would have died of uræmia. Dr. Harris had undoubtedly saved the patient's life by recognizing the condition of the sound kidney, and by catheterizing and washing out the ureter prior to operation.

In his reply, Dr. Harris did not agree with Dr. Worrall that cystitis was a very frequent cause of pyuria. These cases were not so simple as they appeared at first sight. In many cases, pus could be seen issuing from the kidney. At times it was quite impossible to form a diagnosis of the cause of the suppuration. In regard to the transperitoneal removal of calculi, he held the opinion that there must be more risk entailed when the peritoneum is opened than when the ureter was approached through the cellular tissue. In none of his cases had he had any signs of pelvic cellulitis.

In reply to Dr. Craig, he said that he had found the indigo-carmine test less trouble than the sulphophenolphthalein test. He urged early interference because the stone, if left for any length of time, tended to become adherent to the ureter. The urine in the case of the renal calculus, in which the urine was sterile, had been examined for him by Dr. Walton Smith. He was unaware of the methods employed. He had sent catheter specimens and bladder specimens.

A meeting of the Western Australian Branch was held at the Perth Public Hospital on May 19, 1915, Dr. Teague (the President) in the chair.

Dr. Holland showed a patient whose *tibia* had been *fractured in five places*. Each fracture was a compound one. The treatment had consisted in using Lane's plates, and the result had been excellent.

Dr. Trethowan showed two pathological specimens. The first was a large *multilocular fibroid tumour of the uterus*. The second was a *malignant tumour of the right ovary and cystic degeneration of the left ovary* from the same patient.

Dr. Teague showed a large *mammary tumour*. It had caused considerable pain, and was found to be very vascular. No diseased lymphatic glands were found at the operation. The tumour had been examined histologically, and was seen to be innocent. At one spot, however, the structure was suggestive of sarcoma.

Dr. Hadley then read a paper on "Some Points in the Treatment of Fractures." The paper was illustrated by a number of splints and skiagrams.

He stated that he laid claim to nothing original in any of the methods of treatment suggested in the paper. Some of the methods had been described in the *British Medical Journal* by Robert Jones, of Liverpool, in an article received in Australia after he had put his paper together. He had learnt many practical methods from this well-known surgeon.

The great importance to the State of the early return to useful work by the injured man was pointed out, and mention was made of the Zander institutes, which many of the large working towns of Europe had fitted up partly out of the public purse.

The great value of fomentations and elevated positions during the first twenty-four hours, as a means of reducing the swelling, was insisted on, even if the orthodox setting of the fracture had to be postponed for the time, as the author considered that much of the after disability and pain was due to allowing this initial swelling to look after itself; in other words, firm, fibrous tissue was allowed to develop in the parts adjacent to the fracture.

He emphasized the advantage of using extension in a more routine way than was usually done in the casualty departments of hospitals, illustrating the need for this by a series of X-ray photographs. Several simple forms of splints for this purpose were shown, all of which could be made either by the village blacksmith or by the practitioner himself with the expenditure of very little time and trouble. Some of these were for the upper and lower arm, as well as for the leg. The speaker ran over the various types of fractures commonly met with, indicating their special features. In dealing with the after treatment, he discussed the value of early massage, and gave a fairly full description of the ingenious machines used in the Zander institutes. In conclusion, he expressed his thanks to Mr. Hancock for the free use of his valuable collection of negatives.

MEDICO-POLITICAL.

A special meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, Dr. A. L. Kenny in the chair. There was a very large attendance.

Dr. Kenny explained that Dr. A. Honman, the President, had been prevented from conducting the meeting by illness. He introduced the subject of discussion, namely, the question whether the medical profession in Victoria would formulate a policy in regard to restriction of the use of alcoholic beverages. The Council has considered this question closely, and had drawn up a memorandum. This memorandum had been published in *The Medical Journal of Australia* (May 29, 1915, p. 512). He emphasized the fact that it represented the views of the Council alone. The members had been called together to deliberate on the matter, and if it was thought advisable, they would appoint delegates to wait upon the Premier and the Chief Secretary, for the purpose of laying the views of the profession before them. He called upon Dr. Ernest Jones to move the adoption of the Council's draft resolutions. Dr. Jones was a member of the sub-committee entrusted with the drawing up of the memorandum.

Dr. Jones, in moving the adoption of the recommendations, said that it was the opinion of the Council that the medical profession should make an announcement in connexion with the question of the consumption of alcohol at the present time. He pointed out that the recommendations were based on plain truths, and he did not anticipate that anyone would find the axioms laid down debatable. He thought that it was too late to form a deputation to wait on the Ministers. The matter had already been discussed in the State Parliament, and a Bill had passed the second reading. The members of the legislature were agreed in regard to the hours during which the sale of spiritous liquors might be permitted. He begged, therefore, to be allowed to suggest that if the resolutions were adopted, they be sent to the Premier, the Chief Secretary and the Press, instead of being taken to the Ministers by a deputation.

Dr. Wilkinson seconded the motion. The recommendations were then read, and approved unanimously.

The following principles were embodied in the resolutions adopted:—

(1) That over-indulgence in alcohol is invariably followed by general inefficiency.

(2) That alcohol does least harm when taken with meals, and that it is in the opinion of the Victorian Branch of the British Medical Association unnecessary for hotels to be open for the sale of alcoholic beverages before the hour of noon or after 8 o'clock in the evening.

(3) The Victorian Branch suggests that it would be feasible to limit the percentage of alcohol in the various beverages, such as wine, spirits and beer, and that this reduction of the quantity of alcohol could be effected without deterioration to the taste or keeping properties of the beverages.

(4) That the worst effects of alcohol are induced when immature wine or spirits are drunk; and that measures could be taken without difficulty to prohibit the sale of such harmful beverages.

At the conclusion of the meeting, Messrs. Pathé Frères gave a cinematographic exhibition. The subjects demonstrated included the development of the mosquito, the tsetse fly and trypanosomes, the comparison of the heart of a turtle with that of a man under conditions of artificial perfusion, the effect of salvarsan on experimental syphilitic lesions, etc. The demonstration was greatly appreciated, and Dr. Wilkinson thanked the firm for the instructive and interesting entertainment.

A meeting of the Western Australian Branch was held at the Perth Public Hospital, on May 1, 1915, Dr. Teague (the President) in the chair.

Dr. Seed read the by-laws regulating the keeping of a register at private hospitals. These by-laws require that the name of each patient, the nature of the disease from which he is suffering, the name of the practitioner attending, and other details shall be given, and a special column is reserved for remarks by the patient. It was pointed out that the practice obtaining of entering either "surgical," "medical" or "maternity" in the column for diagnosis had not been objected to until quite recently, when a member of the Branch had been informed that he would be prosecuted for failing to give the real diagnosis. The fact that all patients had access to the registers for the purpose of entering any remarks they wished to make had led the practitioners to adopt this expedient.

It was proposed by Dr. Holland, seconded by Dr. Couch, and resolved unanimously:—

> "That the Perth City Council be asked to receive a deputation, consisting of the Vice-President, Dr. Officer, Dr. Clement and the Honorary Secretary, to urge the alteration of the By-law 15 (p)."

It was further proposed by Dr. Seed, seconded by Dr. Hadley, and resolved:—

> "That an alteration in Clause 16 (a) be also urged."

Dr. Teague proposed that a letter of sympathy be addressed to Mrs. McWhae, expressing the sorrow felt by the members of the Branch on learning that her son had been wounded, and congratulating her on the very fine work accomplished by him. The motion was carried unanimously.

Dr. Ramsay congratulated the members going to the front, and especially Dr. Trethowan, who had done so much for

the welfare of the Branch. Dr. Trethowan, Dr. Teague and Dr. Cantor replied.

At a meeting of the Queensland Branch, held on June 4, 1915, at the B.M.A. Building, Adelaide Street, Brisbane, Dr. Brockway in the chair, Dr. Robertson moved:—

"That in view of the dangers of alcoholism to our troops, members of the Queensland Branch, British Medical Association, pledge themselves to become total abstainers during the period of the war."

Dr. Love seconded this motion, which was carried unanimously.

The following have been nominated for election to the New South Wales Branch:—

Dr. Claude J. Tozer, Royal Hospital for Women, Paddington.

Dr. George Hay, Royal Prince Alfred Hospital.

BELGIAN DOCTORS' RELIEF FUND.

New South Wales.

Since May 18, 1915, only three subscriptions have been received by the Council of the New South Wales Branch to the Belgian Doctors' Relief Fund. A further appeal has been issued to the members. We venture to express the hope that those members, who have not yet subscribed, will do so without loss of time. Contributions, no matter how small, will be gratefully received by the Treasurer of the Branch.

	£	s.	d.
Amount previously acknowledged	557	2	6
Dr. Norris, Andrew, Sydney	1	1	0
„ Parker, L. R., Rose Bay	1	0	0
„ Robertson, Annie, Sydney	1	0	0
Total	£560	3	6

South Australia.

The thanks of the Treasurer of the South Australian Branc hare expressed to the following members who have contributed to the fund in aid of the Belgian doctors.

	£	s.	d.
Amount previously acknwoldged	440	15	0
Anonymous (per Dr. J. C. Verco)	1	1	0
Dr. Blackney, S.	1	1	0
„ Dawson, Dean	‡2	0	0
„ Lamb, W.	†1	1	0
„ McAree, J. V.	3	3	0
„ Plummer, Violet M.	†1	1	0
„ Sangster, J. I.	†0	10	6
„ Shepherd, A. E.	2	2	0
„ Stokes, A. F.	‡1	1	0
„ Verco, J. C.	*5	10	6
„ Wilson, C. E. C.	2	2	0
Total	£461	8	0

* Second Donation and Dinner subscription. † Second Donation. ‡ Second and Third Donation.

Public Health.

NOTIFICATION OF VENEREAL DISEASE.

New regulations under the Quarantine Act have been prepared by the Quarantine Authority. and have received the approval of the Federal Executive Council. An abstract of these new regulations will be published in a subsequent issue. The most important change is comprised in the inclusion of syphilis and gonorrhœa among the diseases which must be notified by the master of any vessel arriving in an Australian port. The penalty for failure to notify cases of these and other notifiable diseases is a fine not exceeding £50. It is stated that on the reception of each notification, the Federal Quarantine Officer will take action, having for its object the check on the spread of the disease. Treatment will be carried out either in hospital or at a quarantine station until the ship sails, or until such time as the patient may be regarded as free from infection. The regulations will come into force on July 1, 1915. It is recognized that the prophylactic value of this new addition to the list will be comparatively small, but it is hoped that the State Governments will follow the example of the Federal Authority, and will supplement the efforts of the latter in attempting to control venereal infections.

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health of Queensland during the week ending May 29, 1915:—

Diseases.	No. of Cases Reported.
Diphtheria	61
Enteric Fever	15
Phthisis	7
Scarlet Fever	2
Erysipelas	2
Varicella	5
Total	92

THE WATER SUPPLY OF ADELAIDE.

The Medical Officer of Health of Adelaide has again warned the community of the necessity to boil or filter water used for drinking purposes. He submitted a report to the Public Health Committee of the Adelaide City Council on May 27, 1915, in which the result of a recent analysis of the water obtained from the metropolitan reservoirs is set forth.

STATE EDUCATION IN QUEENSLAND.

The Under Secretary for Public Instruction, of Queensland, has compiled a comprehensive account of the development and present position of education in the State, and this account, artistically illustrated, has been issued in book form by the Department. The object of the publication is to tell the public in a simple, lucid and connected form, what the Education Department is doing to educate the children of Queensland. This object has been attained, and we can recommend a perusal of the publication to all who are interested in the development of education under difficulties. The chapter dealing with the work of the travelling teacher, who has to do his best to instil the rudiments of an elementary education into children he can only see four or five times a year, is a fascinating one to read, and, with the aid of the excellent photographs, some idea can be gained of the difficulties of the problem and its solution. A healthy aspect of the whole question of education in State-aided schools is put forward with some prominence, in that the public is told that it is quite erroneous to regard the education as free. The parent pays indirectly for the education of his children.

It is impossible to deal with all the important matters connected with State education in this place. The chapter dealing with medical inspection is a short one, but the text is amplified by pictures descriptive of the methods of examination. Since education is compulsory from the age of six to the age of fourteen years, it is held that medical and dental inspection during the whole of this period is but a logical corollary. There are two full-time medical officers, two school nurses, one full-time ophthalmic inspector, four part-time medical officers and three full-time dental inspectors. These officers have to deal with as much of the school population as the present conditions admit of. We are told in another part of the publication that the primary school population between the ages of five and fifteen is 40,000. In necessitous cases, dental treatment is given without payment. The word used in the book is attendance, but it is much wiser to use the simplest terms in this connexion, in order that no misunderstanding may arise. The medical profession has held, since the introduction of medical inspection of school children, that the inspection must be kept distinct from treatment. We learn that in isolated centres the Department pays an allowance of £50 per annum to the hospital doctor, and for that fee he attends to the school children in his centre. There are 33 of these school-hospital centres. Under the conditions of a sparsely-populated district, where the provision of medical attendance involves difficulty, and where the question of inter-professional relationship cannot arise, no objection can be raised against an arrangement between the local practitioner and the Government by means of which inspection and

treatment may be carried out, as it were, in one act. It must never be forgotten that the primary object of medical inspection of school children is the improvement of the health and physique of the young. For this reason no regulations which would diminish the efficiency of the service could be upheld.

The work of the ophthalmic inspector is extremely arduous. It is stated that he travels upwards of 7000 miles annually, and since his work lies in the out-back districts, it is peculiarly gratifying to learn that, while there were 20.6% of the children affected with trachoma in 1912, and 12.1% were bad cases, the condition was recorded in 9.46% of the children in the following year, and only 1.66% were bad cases. In the south-western district, the percentage was 5, and in the Maranoa district it was only 4.6.

The medical inspection has cost the State about £6,600 per annum, and for this sum satisfactory practical results have already been achieved.

Obituary.

GORDON CLUNES McKAY MATHISON.

Dr. G. C. Mathison, M.D., B.S. (Melb.), D.Sc., Lond. who was killed in action in Galliopli, on May 23, 1915, was the most brilliant of the younger men in Australia. He was a student of Queen's College, in the University of Melbourne, and graduated in 1906 with first-class honours in every subject. He was appointed Resident Surgeon to the Melbourne Hospital for twelve months, and then filled the positions of Demonstrator of Physiology at the Melbourne University and Medical Tutor at Ormond College.

Two years after graduation he went to London, where the excellence of his research work soon attracted attention. He was at first Lecturer in Physiology at St. Mary's Hospital, and was later appointed assistant to the Professor of Physiology at University College. He was regarded as one of the most brilliant men in this famous physiological institute.

In 1910 Dr. Mathison was appointed Beit Memorial Research Fellow, and he worked at University College, University College Hospital, the Medical Polyclinic at Freiburg and the Lister Institute of Preventive Medicine. He was offered the Professorship of Physiology at Singapore, but preferred to accept the positions of Sub-Director of Pathology and Sub-Dean of the Clinical School at the Melbourne Hospital. Before leaving London, in 1913, he was for six months Senior Resident Medical Officer at the Royal Chest Hospital. Before the outbreak of war, he was occupied in organizing the pathological work at the Melbourne Hospital.

Dr. Mathison was the first Victorian Representative of *The Medical Journal of Australia*, and when his military duties forced him to relinquish this, as well as his other offices, temporary arrangements were made in the fond hope that, before long, his valuable collaboration would be renewed. That hope, alas, was vain. Whilst on active service he was appointed Director of the Hall Institute for Medical Research. He was awarded the degree of D.Sc. in the University of London in 1913. His published works include the following:—

- Estimation of Ammonia in Urine, *British Medical Journal*, 1909.
- Estimation of Phosphorus in Urine and Output of Organic Phosphorus, *Biochemical Journal*, 1909.
- Action of Asphyxia on the Spinal Cord.
- Action of Asphyxia on the Medullary Centres.
- Effect of Acids in the Reduction of Oxyhæmoglobin.
- Observations Upon Mountain Sickness, *Journal of Physiology*, 1910-11-12.
- The Cause of Asphyxial Heart Block (with Thomas Lewis), *Heart*, 1910.
- Sensory Fibres of the Phrenic Nerve, *Rev. Neur. and Psych.*, 1912.

This record of appointments and papers in chronological order can give no idea of the genius of the man, but it will be seen that Dr. Mathison's training had fitted him in an unique way to fill the position of Director of Australia's first pathological research institute.

Dr. C. J. Martin, Director of the Lister Institute, said of him, "No man I have ever known possesses the genius for research so highly at Mathison. He always seems to know by instinct the essential difficulties of a problem and how to tackle them."

When such an opinion is expressed by an authority who is in intimate contact with the great scientists of Europe, it will be realized that the Melbourne Medical School and Australia have sustained an irreparable loss.

The very qualities which ensured his success in science led him to enlist at the very outset of the war, and later to seek the post of greatest danger. His end was as brave and spirited as his life, but leaves his friends desolate and heart-broken. His memory will ever remain clear and bright, to inspire the Melbourne Medical School.

A Personal Tribute.

By H. W. Allen.

Of Dr. Mathison as a scientist, let others speak. I speak of him as a friend, and as a friend he was wonderful. I met him first when he came to be Medical Tutor of Ormond, in 1907, and I well remember the expression of Dunhill in introducing him; a look of conscious pride in standing sponsor for such a man, mingled with an anxiety that I would realize the benefit he was conferring.

"Mathie," or "Mattie," as he was familiary known, did not advertise his importance with a brass band, and it was a great joke, to him as well as to us, when a second-year man saw him going along the passage with a microscope, and began to be nice and patronizing to the "new freshman." But a few minutes in the society of this unassuming little figure, and you began to sit up and take notice. And the more you knew him, the more notice you took.

We were a very happy company that year, "Mathie," Latham, Parnell, Ulrich; and many a merriment have we made together. There would he be, sprawling in his favourite attitude, prone on my hearth-rug, with wit and wisdom bubbling out of him, or giving us a correct imitation of some well-known figure at the hospital. He was such an inveterate mimic that he could hardly help imitating the mannerisms of the man he was talking to. He never flagged: the variety of his interests was remarkable. I have been with him on all sorts of occasions—smoking and yarning, cricketing, camping, canoeing, fishing, ski-running—and it was always the same: whether it was a question of scientific knowledge, or of academic diplomacy, or the value of a book or a picture or a piece of music, or the fastening of a ski-binding, it was always "Ask 'Mathie.'" Wherever he was, there was something doing, and wherever there was anything doing, there he was. His cheery, chubby figure was welcome everywhere; he knew every Professor and every policeman in London, and was equally at home hob-nobbing with either. He was like Kim, "the little friend of all the world."

He was one of the first to volunteer for service, and, being one of the first, was put into a place too dangerous and too unworthy for so valuable a man. But he went through with it, because he felt that it was his duty.

And now he is gone, lost to his country and his friends, wasted by the wickedness of war. And this, for me, is his epitaph:—

OCCIDIT
PRO PATRIA PRO HUMANITATE
A.D. X Kal. Iun., MCMXV.
"ANTE DIEM MEDIAQUE INHUMATUS ARENA."

RICHARD NASON GAGGIN.

It is with regret that we have to record the death of Dr. Richard Nason Gaggin, which took place on May 19, 1915, at Lismore, New South Wales. Dr. Gaggin, who was 85 years of age, had been in good health up to the beginning of the month, when he was affected by cystitis. Pneumonia supervened, and, after a few days' duration, proved fatal. Dr. Gaggin was a diplomate of Edinburgh, having been qualified in the year 1884. He practised first in Scotland, at Inverkeithing on the Forth, and in the following year came to Australia. He settled in Lismore, and acquired a considerable practice. He was Medical Officer of Health for Lismore from 1901 up to the time of his death. He was greatly respected and admired, and his loss is mourned by a large number of friends and patients, as well as relatives. He leaves a widow, three sons and four daughters.

Correspondence.

AN UNRECORDED SYMPTOM IN SOME CASES OF CHRONIC APPENDICITIS.

Sir,—I can find no reference in the literature of chronic appendical inflammation to tenesmus of the rectum as one of the severest symptoms complained of. I confess that until a year ago I had not myself heard it mentioned or described, but in the last few months three cases have come under my notice, two of which I have operated on. Besides the common symptoms of abdominal pain and tenderness and some nausea, both patients complained of pain referred to the anal region, producing a feeling of desire to defæcate. On attempting to do so the result was extremely slight, and the feeling persisted for some little time, and then wore off.

Both patients were women, and suffered from chronic dyspeptic symptoms, largely flatulent in nature. The rectal tenesmus persisted more or less at all times, in one case coming on regularly after every meal, and being most distressing. And this was quite apart from any actual abdominal pain, which was apt to come on in "attacks" of a day or two in duration. One patient had lost two stones in weight, and was afraid to eat anything, except the most simple and unattractive food.

She was a married woman of 34 years of age, and had two children, the youngest aged eight years. Her menstrual and obstetrical history was normal, and rectal and vaginal palpation revealed no abnormality. She was tender, but not rigid, in the appendical region. The right rectus incision was made in preference to the grid-iron, so that the pelvis could be thoroughly explored, but absolutely nothing pathological could be seen or felt. The appendix was brought up and examined. There were no adhesions, but it was greatly thickened and sclerosed, and a peritoneal fold at an angle of 90°, with the usual meso-appendix, ran from near its top to the caecal attachment, while the meso-appendix itself was also thicker than usual. On slitting the appendix open, pus and fæcal material were seen to fill the lumen, which did not seem kinked at all.

I do not know what is the explanation of the rectal tenesmus, which completely disappeared after the operation, as did also the dyspeptic symptoms. Is it some kind of reflex? The other case was less marked in the post-prandial character of the tenesmus, and there were some adhesions present, but otherwise the cases are closely similar. What I wish to emphasize is that in neither was there any abscess or acute character, or any direct influence which might make us think of pressure or other rectal involvement, nor was the appendix pointing down or adherent in the pouch of Douglas (in fact, in the more marked case there were no adhesions at all), and yet this symptom was present. And in both cases the tubes and ovaries were brought up into the wound and examined. They presented no macroscopic abnormality. I leave the explanation to others.

Yours, etc.,
ROY HUCKELL, M.B., Ch.B.

Melbourne, June 4, 1915.

A WARNING.

Sir,—Would you kindly warn your readers against a woman, who is selling an American syringe in my name? She has been a persistent house-to-house canvasser for some weeks, but I have only just become aware of the fact. I have never met the woman, nor seen the instrument she is selling, but I shall be most grateful if any of your readers will notifiy me, if they hear of her again.

Yours, etc.,
VIOLET M. PLUMMER.

"Binswood," 62 North Terrace,
Adelaide, June 3, 1915.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvi.

Bundaberg General Hospital, Medical Officer.
Camooweal Cottage Hospital, Medical Officer.

Diary for the Month.

June 15.—N.S.W. Branch, B.M.A., Executive and Finance Committee, Ethics Committee.
June 16.—Vict. Branch, B.M.A., Clinical.
June 18.—Q. Branch, B.M.A., Council.
June 19.—W. Aust. Branch, B.M.A., General.
June 25.—N.S.W. Branch, B.M.A., Ordinary.
June 29.—Vict. Branch, B.M.A., Eye and Ear Section.
June 29.—N.S.W. Branch, B.M.A., Organization and Science Committee, Medical Politics Committee.
June 30.—Vict. Branch, B.M.A., Council.

Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Mullumbimby District Friendly Societies. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Br[illegible]wood. F.S. Lodges at C[illegible] F.S. Lodges at Lit[illegible] F.S. Lodges at Mudg[illegible] F.S. Lodges at Orange. F.S. Lodges at Parramatta, [illegible] and Auburn. F.S. Lodges at Wellington. Killingworth Colliery, Newcastle. Seaham Colliery No. 1, Newcastle. Seaham Colliery No. 2, Newcastle. West Wallsend Colliery, Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to "The Medical Journal of Australia" alone, unless the contrary be stated.

All communications should be addressed to "The Editor," "The Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.

The following periodicals are required by the Librarian of the New South Wales Branch of the British Medical Association to complete the series for binding. Members who have borrowed these journals are requested to return them as soon as possible.

Lancet, November 7, 1914.
Lancet, November 14, 1914.